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SECTION 400.00 – FINAL DESIGN

SECTION 405.00 – FINAL DESIGN INTRODUCTION

Final design is the culmination of detailed assessments about environmental requirements, design guidelines, plans reviews, right-of-way, utilities location, materials, drainage, special provisions, agreements, estimates of cost, etc., that must all be addressed before finalizing a project. As has been discussed in previous chapters and in the following information, consideration of these requirements must be made before a Final Design Review can be requested. The Final Design Review indicates that design features have been resolved, review requirements have been completed, no further changes or major problems are anticipated, and plan preparation is in accordance with this Design manual. This chapter covers several additional considerations that have not been previously addressed and the requirements for Final Design and the Plans, Specifications, and Estimates (PS&E) submittal.

SECTION 410.00 INTERMEDIATE DESIGN REVIEW (OPTIONAL)

The District may hold an Intermediate Design Review at any time on specific items when input is desired from other sections, or when items with anticipated controversy could be resolved early in the project design. The Intermediate Design Review allows the District, Roadway Design, Environmental, Bridge, Traffic, and others when appropriate, an opportunity to review and comment on design details of the roadway, bridge, and traffic plans prior to completion of the plans for the Plans, Specifications and Estimates submittal. Intermediate Design Reviews that affect a Port of Entry building or scale must also include the Port of Entry Manager.

Pavement marking, delineation, signing, traffic signals, illumination, and intersection designs plans especially should have an Intermediate Design Review by the Roadway Design and Traffic sections. These plans should include existing and proposed utility pole location; street illumination; traffic islands and traffic signal poles; vehicular directors; signal heads and controller; locate "no parking" and "restricted parking" zones, hours, etc.; bus stops and direction of one-way streets; and all traffic control signs.

The plans should show the condition of existing pavement on all approaches where loop detection is proposed; locate overhead and underground utility wires, fire hydrants, basements, or any other appurtenances that could influence the design.

For an Intermediate Design Review, the District shall transmit the plans to Roadway Design to be reviewed by the appropriate HQ sections. The plans may be in a semiformal form with pencil drawings and handwritten information acceptable; however, the information and design details shall be complete and in a form that can be reproduced. The District shall notify and coordinate with Local Public Agencies/Consultants and other outside agencies that are involved in the project of the Intermediate Design Review.

The recommendations and comments discussed at the review and decisions made will be recorded and published by the District in the Intermediate Design Review Report. All additions and corrections that result from the Intermediate Design Review are to be completed prior to the next review. The District then finalizes the plans for the next Design Review, or if the Intermediate Design Review was held after the Final Design Review, the plans are finalized for the Plans, Specifications and Estimates submittal.

SECTION 415.00 – RIGHT-OF-WAY CONSIDERATIONS

Projects that need to acquire new right-of-way including Easements, Permanent (P) or Temporary (T), or Right of Entry, require the preparation and submission of "Official right-of-way Plans" along with any substantiating documentation necessary for the completion of the plans.

For projects with Federal-aid participation the appraisal review process and subsequent negotiations cannot begin until the environmental document has been approved. Appraisals can be completed prior to FHWA approval.

To ensure early initiation of these activities, priority shall be given to completion of those features of the design required to be shown on the right-of-way plans.

415.01 Determination of Property Lines. The Project Development Engineer and/or the District Location Engineer/Coordinator will determine property lines and existing public right-of-way and the Engineers/Land Surveyors in the Districts are required to file a record of the survey. However, when a right-of-way plat is recorded under [Idaho Code, Section 40-209](#), a record of the survey is not required. See [Idaho Code, Section 55-1908\(2\)](#).

415.02 Ownership Data. The ownership of all lands affected by the right-of-way proposed for the project will be determined from available county records or last deed of record obtained from a title company.

Care should be taken when determining if the existing public road areas are included in the total assessed areas. County records show public roads on existing right-of-way as waste. Some assessors include waste in the total assessed ownership, others don't.

On new locations where areas of remainders are also required to be shown on right-of-way plans, the total area of record for each ownership shall be secured. When more than one remainder exists, the area of each remainder does not need to be computed exactly, but may be approximated as closely as possible, and adjusted accordingly to conform with the following situations.

If the assessed ownership includes existing public roads: Add the remainder to equal the total.

If the assessed ownership **does not** include existing public roads: Take the existing public road (within proposed R/W) + remainders = total.

Remainders through federally owned lands need not be shown.

The parcel number appears on each plan sheet, where appropriate, and color coded to match the right-of-way acquisition area. When an individual ownership extends to more than one plan sheet, the parcel number will be placed on each plan sheet which shows acquisition from that parcel.



Ownership Parcels: Typically the presence of the following three elements is considered in determining total ownerships:

- unity of use,
- title, and
- contiguity.

The courts recognize that the *unity of use* is predominant, even though consideration is given to the other two. If physical separation is by virtue of an existing public way wherein the title thereto is easement in nature rather than fee simple, the recommendation would be to consider as one ownership if the other two elements are not in conflict.

Warranty Deed: The warranty deed is the conveyance now being used by the State in the acquisition of right-of-way; and where possible, that portion of the existing right-of-way to be retained by the State for future use will be made a part of the total described area being conveyed in the deed. The public ownership of deeded existing right-of-way can be supported in court. However, a right-of-way by usage or prescription may not be upheld as to width of rights of way in court. For this reason deeded existing public right-of-way intersections with new right-of-way shall be shown by plusses, except in those cases where the old and new rights of way are parallel and the existing public right-of-way is shown by widths at each end of the Federal-aid plan sheet.

Reference to old project plans for determination of the extent of right-of-way will not be necessary as the complete information will be shown on the new project plans. In those cases of public right-of-way where deeds do not exist, neither the right-of-way nor the centerline of the existing road is to be tied to the new alignment and/or right-of-way.

415.03 Title Reports and Supporting Data. Initial design and development of right-of-way plans should be done from the last deeds of record. The District should request copies of all last deeds of records and any other documents pertaining to existing and public right-of-way or easements involved with the proposed project. This request is made directly to the District right-of-way Supervisor.

Title reports should be examined for easements or other encumbrances which would reveal the existence and location of water lines, conduits, drainage, irrigation lines, etc., that may need to be provided for in construction.

The request for deeds and other documents shall be noted on the exhibit or listed in the letter of request and shall include:

- A list of underlying project numbers (i.e., Construction, P.E. and R/W project numbers),
- sections or 1/4 sections with township, range, and platted subdivisions (lots, blocks and name of subdivision, if known).

415.04 Ownership Submittal Requirements.

Ownership Data Form: A completed, signed and dated ownership data form is required on all parcels for the project. The ownership pattern shall be determined for initial use in location studies and later in preparation of map sheets for getting title reports and preparation of right-of-way plans.

For those properties where improvements are within the proposed right-of-way limits, the bottom portion of the form needs to be completed to show size of family, whether they own or rent, etc., for dwellings, and other pertinent data for other types of relocations.

Title Reports: Title reports for all property or rights, roadside parks, access rights, easements and permits, or prescriptive rights to a public road or street, including title reports to cover all properties served by easements or permits are required. These reports are examined for easements or permits granted to owners of property that does not abut the highway but may be affected by the new highway facility. All title reports will be coordinated with headquarters title section.

Total Ownership Map and Parcel Tabulation Listing: The following (see exception) are also required to be submitted with the right-of-way Plans:



- a separate total ownership map that covers the entire project at a scale suitable to show all ownerships involved; and
- a parcel tabulation listing with column headings showing: Parcel No., Parcel ID Number, Record Owner, Total Accessed Ownership, right-of-way (required and existing), Remainder - Left and Right, and Easements - Permanent or Temporary or Right of Entry or donations.

Exception: The existing plan sheets can be used to show the total ownership and parcel tabulation for projects having the following situations:

- Limited number of parcels (1-3).
- Project has one or two plan sheets.
- Ownership data shown on the plan sheet, or with the parcel number.

On interstate and other select projects where the ownerships are unusually large, the base for the Road Closure Map may be used in preparing the Total Ownership Map. For intermediate area suburban tracts it may be possible to secure a transparency of a subdivision plat of suitable scale for this use.

The District assigns the parcel number and a parcel ID number (obtained from headquarters title section) for every ownership involved from the beginning to the end of the project, including river crossings under the jurisdiction of the State Land Board and railroad crossings. The number is used on all right-of-way plans, preliminary commitments, deeds, easements, or other substantiating data.

Parcels are to be numbered in consecutive order starting with number 1 at the beginning of the project and continuing in numerical sequence through the end of the project. Once the parcel numbers have been assigned and the title reports have been ordered, the parcel numbers shall not be revised, except in the following instance. If subsequent to the assignment of parcel numbering the ownerships are split and an separate number is required, the next highest number should be used regardless of its location within the project limits. (The Real Property Management System identifies a parcel's relationship to the project through highway stationing.)



Separate parcel numbers and descriptions should be assigned for:

- Uneconomic remainders for ease in trade or disposal,
(Should be shown as .5 on the original Parcel No.)
- Noncontinuous remainders (including those as a result of the proposed acquisition), and
- Division of or additional acquisition from an existing parcel.

When an old plan style necessitates an update — parcel numbers, names, areas, and remainders shall be included and supplemental title reports added to make original transaction complete.

Where a temporary easement or right of entry is the **only** property right to be acquired from a particular ownership, the parcel identification number should be in whole numbers as above, such as 2520 E 01 (Proj. Key # E Parcel #). If river or railroad crossings are involved, only the areas of requirement are to be tabulated.

When a public road or existing right-of-way is **not** included in the tabulation because the county record shows the road as waste, include a note in the total ownership parcel tabulation and on the plan. Show area of the total contiguous ownership as shown in the County Assessor's records in dual call outs (metrics first and English in parentheses). Also show the new right-of-way to be acquired and the now existing public road encompassed by the proposed right-of-way.

Retention of the total ownership map shall be with the construction plans.

415.05 Preparation of Right-of-Way Plans. All plans will be done in accordance with [Idaho Code, Section 40-209](#), when referencing the requirements for plats to be filed.

The designer will check the following list of items for inclusion in the preparation of right-of-way plans, the Total Ownership Map, and other right-of-way documents.

Original Land Survey Notes: Available in each county from the office of the County Surveyor or Recorder.

Plats: The highway right-of-way plat shall contain the following:

- (a) Project name and number;
- (b) Monuments found, set, reset, replaced, or removed describing their kind, size, and location and giving other data relating thereto;
- (c) Bearings, basis of bearings, length of lines, scale of map, and north arrow;
- (d) Section, or part of section, township, range, and reference to adjoining plats or surveys of record; and ties to at least two (2) public land survey corners, or in lieu of public land survey corners, to two (2) monuments recognized by the city engineer or surveyor, or county engineer or surveyor;
- (e) Outline of all parcels of land to be acquired and identified with parcel identification numbers with bearings and distances;
- (f) Acknowledgment of the authorized agent of the public highway agency filing said plat;
- (g) Certificate of land surveyor under whose responsible charge the plat is prepared.

Any amendments, alterations, rescissions, or changes in a highway right-of-way plat shall comply with the above requirements.

Check the proposed alignment location against the township plats to verify that all the subdivisions being crossed have been properly designated and the correction shown along equation lines common to adjacent townships. In platted areas such as suburban tracts, lakeshore lots, patented mining claims and city subdivisions, secure copies of official plats for map preparation work. Include with this group, prints of existing highways, railroads, utilities, and any other facilities where plans or maps of record may contain valuable historic information.

Centerline Stations: Right-of-Way widths and centerline stations are shown at the beginning and end of each sheet and at all points of change in width of the right-of-way. Distance left or right is not called on a plus unless the right-of-way width is variable.

Angle Points: Right-of-Way angle points are set at even stations and at curve points, by custom, in which case they need no additional plus. If the angle points are set at +50 or other odd stations to make a symmetrical fence line, the odd plus mark must be noted on the plans.

Quarter Section Lines: Quarter section lines that are based on found monuments shall be tied to centerline stations unless specially excepted. Compute the tie to a centerline intersection along the section subdivision line with a station, bearing, and distance to the corner.

Ties: The best property tie is one which results in an actual direct tie to the point or corner. Always show ties to city limits, county and state lines, and to adjacent projects. The tie information must include equations to stationing and bearing, where applicable.

Where the new improvement follows along or crosses an existing highway that was built on deeded right-of-way, tie in and locate the old highway completely with stations, curve data, bearings, and right-of-way dimensions, so old and new right-of-way lines may be computed.

Subdivided city property and platted rural tracts are typically more expensive properties. Accurate ties or major corners are imperative. Therefore, *lot measurements and angles must be shown where subdivided property will be effected by right-of-way acquisition*. There must be sufficient ties to subdivision corner monuments to enable the designer to compute by coordinate any segment of the internal lot group which may be severed in the final right-of-way purchase. Where subdivision lines are difficult to establish, it is recommended that fence lines be located accurately by a turned angle and station at the intersection with the survey line.

Make the tie in the field by establishing the property line and recording the station; then show the plus and angle where the tie crosses the surveyed line. Do not record on the plans odd angle ties that are unrelated to the intersecting property lines. Recompute the tie to the proper intersection plus and distance or to a right angle tie to the centerline; with station and distance out. When the survey is related to the ISPC System, compute X/E and Y/N coordinates for all "found" property corners.

Property Line Intersections: All property line intersections with old and new right-of-way shall be plussed from the new centerline and stated on the legal description of the right-of-way requirement. Angle points in property lines inside the right-of-way may have bearing and distance reference from a previous property line. It is permissible to use both bearing and distance and plusses on the same property.

Access Rights: Where access rights have been or are to be acquired, show level of access, access control lines and all approved points of entry to or exit from the traffic lanes, even where right-of-way lines and access control lines are coincidental.

Donations: Parcels that the property owner has indicated that they will waive their right to compensation must still be documented on the plans as an acquisition.

Easements: Any easements required outside the right-of-way to accommodate intersecting roads and streets, land service, access and temporary roads, drainage areas, material storage areas, slope widenings, utilities, railroads, and for any other special use must be delineated with adequate data shown to permit description, including area in dual callouts (metric first and English in parentheses).

Permanent Easements are used where parties other than the owner need to maintain a right to the land such as a pipeline or an access road. Interceptor ditches that are normally at the top of cuts, shall have permanent easements.

Temporary Easements give permission to use the land for a brief period of time such as during construction.

Right of Entry that solely or primarily benefit of the property owner will be designated on the plans as rights-of-entry and not as easements and will not be paid for or condemned. If the particular item that requires the right-of-entry, such as a private approach, can be eliminated from the project without adverse impacts to the project or the adjoining property owners, and the owner denies right-of-entry, the item will be eliminated from the plans and will not be constructed on the project.

If there is property to be acquired on the parcel, the action must be a temporary easement not a right of entry.

Approaches: All Public Roads and all Approaches shall be labeled (joint use, private, commercial, etc.). In addition to documentation of an approach use in the owner contract, show on the plans, at the entry locations, the type of use for each approach. Position all approaches to fit the designated approach policy and where necessary use average spacing. Show station and width of each approach. Show a profile for all approaches having a cut or fill height of 3 feet (1 m) or greater. Make a special sheet for approaches if there is not sufficient space on the profile sheets.

Check R/W records, recorded deeds and District Access permits for the legality of all approaches shown on a project.

Slope Limits: Proposed limits of slope need to be shown on the right-of-way plans to support the area to be acquired. Slope lines should be carried around any approaches.

Encroachments: Permanent encroachment on existing or new right-of-way will not be allowed unless a permit or Air Space Lease has been issued by the District Engineer or Local Public Agencies. For conditions that permit encroachments, see ITD - Administrative Policies. All encroachments that are permitted to remain and those that will be removed should be identified on the plans as follows:

Label as to name

Dimension of the encroachment

Clearance height from roadway surface

For those that are retained and/or protected - Show permit number issued by state or city

Railroad Crossings: The crossing by a highway over, under, or at grade of railroad property is by easement; and encroachment information together with area computations is also required. The District must separate that portion eligible for "G" funds (railroad funding) from the main project. The "G" split should be made early in design so "G" quantities can be separated for computation. Further, the "G" splits must be submitted to the Utility Engineer for their version of the "Official right-of-way Plans." The project numbering breakdown, when approved, establishes the estimating splits for all quantities for final estimates. A right of encroachment is acquired from a railroad company when adjacent highway requirements overlap railroad property. The encroachment line is labeled and drawn at the same weight as the right-of-way line. At the beginning and end of the encroachment show the Highway Station with the equivalent Railroad Station. Distances to the encroachment line and the railroad centerline are normally taken to the highway centerline. Under certain conditions it may be necessary to describe the encroachment using railroad stationing by metes and bounds description.

Utility Crossings: Right-of-Way adjustments because of utility line crossings or service access to utility lines shall be shown.

Intersection Channelization: Channelization of intersections, which affects previous access to properties shall be shown.

Drainage and Structures : Type and size of small drainage and access structures should be shown. Roadway details are not needed at the right-of-way stage. Cross-drains, embankment protectors, etc., need not be shown in size and location. All types of ditches, irrigation pipe lines, concrete lined ditches, checks, etc., must be shown on the plan but need not be shown on the profile.

Appropriate Evidence: Frequently, the District has to resolve the issue of appropriate evidence of property lines for purposes of right-of-way activities. The property line could be a fence, ditch, partial section boundary (1/16), or the line described in the property deed.

These topographic features shall be shown as they actually exist in the field and appropriately indicated on the plans in reference to land section divisions and deeded property descriptions. The District should then determine and designate the property line to be used for determination of right-of-way requirements.

Negotiated Items: Items (generally irrigation ditches or fencing) that are negotiated for the owner to construct, as stated in the right-of-way contract, will be designated on the plans as "By Owner." All designed items originally shown on the official right-of-way plans shall be retained on the right-of-way **and** final design construction plans whether or not the items are currently negotiated for the owner to construct.

A typical example is a concrete-lined ditch which is initially shown on the plans as a construction contract item within a temporary easement. If, by negotiation, the owner is paid for the ditch "*in lieu* of construction" and the negotiated item is so stipulated in the right-of-way contract, then a right-of-way revision would be submitted showing the elimination of the temporary easement and with the ditch still shown on the plans. The concrete-lined ditch profile the construction plans would have a line drawn through it and the plans would state "Concrete-lined ditch by Owner." These designations are intended to allow the Resident Engineer to identify the history of a design element on the plans by using present construction plans, or later reviewing as-constructed plans and to determine which items were negotiated for the owner to construct and if the owner did in fact construct the facility.

Costs: All pertinent data affecting the cost of the right-of-way shall be documented. Include commercial and all public buildings; dwellings of all types including out-buildings along with topographic features; and showing fences, land service or access roads; and all improvements (above and below ground level) both existing and those to be moved or adjusted. Special attention needs to be given to identifying sewerage and well systems located within the proposed right-of-way. (Use [ITD-2839](#), Right-of-Way Cost Estimate.)

415.06 Right-of-Way Plan Format. Right-of-Way plats are to be 18" x 27" on vellum. Right-of-Way plans are prepared on standard 11 x 17 inches (279 mm x 432 mm) sheets of stable reproducible material (Mylar). Colored right-of-way plan prints are prepared on size 11 x 17 inches (279 mm x 432 mm) sheets of durable print paper.

Consistent drafting procedures must be observed to attain maximum accuracy and clarity.

All right-of-way plans and exhibits will be done in dual units with the metric units first followed by the English units in parentheses.

415.07 Idaho State Plane Coordinate System. Where the Idaho State Plane Coordinates (ISPC) are used, the following information must be furnished for incorporation onto the plan sheets:

- A note indicating that ISPC (adjusted or unadjusted) were used. Show on the first plan sheet in the upper left corner the Coordinate Datum, Idaho Zone number (Western, Central or Eastern), and a statement that bearings are Grid Bearings.
- Show Grid Bearings on each tangent and on other parts of the plan, where required, in a standard manner.
- Show ISPC for highway control points, such as P.I.'s, section corners, major monuments, etc., and at the beginning and end of the project. There must be at least two coordinate control points for each tangent to establish the azimuth or bearing of the line on the grid.
- Show delta-alpha correction once for each plan sheet. If property extends from one sheet to the next, calculate a delta-alpha correction for the point of beginning.

415.08 Scope of the Plans and Vicinity Map Information. The Title Sheet should be reproducible and made from the construction project plans title sheet.

The following minimum information must be included:

- Plans are to be oriented with the milepost and highway engineers stations increasing from left to right. When existing surveys conflict with this procedure, the centerline should be re-established if new plans are drawn.
- At the BEGIN and END designation show the station and mileposts. Beginning and end of project should be cross-referenced to contiguous plans. Total length of project is shown on the Vicinity Map only.
- Property line symbols shall be shown on both sides of the right-of-way where a property line is continuous across the right-of-way.
- Bracket the construction project limits ONLY and use the project construction number, not the right-of-way number.
- Drawings are never extended beyond the border of the sheet.
- Show project numbers in the same order and in the same place as indicated on the project construction plans. Project construction numbers shall be shown on all sheets of the project plans. Additional project numbers assigned to the project for R/W, P.E., etc., are to be shown only on the title in the sheet title block, together with the Key No. and Project Name.
- Where recorded tracts are described locally by tax numbers, the inclusion of tax designation and legal description of the tract is helpful.
- Right-of-Way lines, widths to be acquired, centerline stationing with appropriate ties to intersecting property lines, and changes in Right-of-way widths are required. Right-of-way lines and access control limits are normally continuous and if they differ, they are to be legible. Notes, dimensions, subdivision information, and similar data are added after the Right-of-way limits for each sheet are established, to avoid erasures and relocation of this data at later stages of plan development.
- All dimensions and computed area must be shown on the final R/W plan. Include the name of the subdivision, designation of lot and block numbers, and all platted dimensions adjacent to the new right-of-way. Show all dedicated widths of streets and alleys. Review all subdivision records for possible public land vacations.
- Show the width of the easement in dual measurements for both temporary and permanent easements and identify the purpose. Show centerline station (plus) at the beginning and end of each easement. Mark each easement as temporary (T) or permanent (P). If the easement is irregular in shape, it shall be necessary to include distances and bearings for the purpose of writing a description in the event the parcel has to be taken to court. All approaches shall be shown on the plans by symbol and, when appropriate, by the type.
- Name all interchanges, highways, city streets, county roads, railroads, and bodies of water. An interchange is shown on one sheet, if possible, even though the adjoining sheets may not be completely filled.
- All topographic features such as fences, ditches, roads, etc., that relate to property use and boundary should be located, referenced to the property surveys and shown on the right-of-way plans. Topographic information should be kept to a minimum, but should be sufficiently complete and up to date to indicate the effects of the proposed right-of-way on improvements (structures, wells, septic) to properties. No symbols for vegetation are used except for the outline of orchards, or similar features directly related to the production of income from a particular property. All man-made improvements 100 feet (30 meters) or less from highway centerline are labeled and dimensioned. ***Structures of historic significance need to be noted.***



- Identify highway structures as over- and under-crossings in relation to traffic movement of main line. Standards, structure, and bridge drawings along with materials source designation are not required.
- Indicate traffic movement pattern by arrows on centerline, with appropriate numeral added for multiple lanes.
- Label turnback lines and areas identified for conveyance (relinquishment, certification, transfer) to the appropriate agencies.
- Information should be placed according to CADD system level assignments.
- Profile Sheets, when necessary, should show ground line and grade line, including profiles of any approaches for which special design is made. Profile in order of continuous alignment complete for all roadways affecting acquisition.

Give consideration to terminating the project on or near a property line. If this is not feasible, show future alignment and grade and right-of-way data ahead through the property to permit securing FHWA obligation of authority for purchase beyond the project limits. This improves the right-of-way design features and allows for a single purchase from each ownership.

Special survey information may be required where buildings and other improvements are located on public property, without benefit of recorded easement, permit, or vacation. The purchase of such property for right-of-way may not be eligible for federal aid.

Metric land measurements and areas are to be carried out to four decimal places and rounded to three; and English land measurements and areas be carried out to three decimal points and rounded to two.

When photogrammetrically prepared maps are used as a base for right-of-way plans, reproducibles should be obtained at an early stage to avoid the need for removing superfluous data.

Right-of-Way overlap between plan sheets or adjoining plans is to be avoided.

Legal description may be a metes and bounds description that is available in the county records.

415.09 Final Owner Contacts. The final owner contact is used to update the design and right-of-way plans to eliminate changes that would affect the evaluation process. The final owner contact is important because Federal law requires a prompt offer after determination of fair market value. If extensive right-of-way plan revisions are required during appraisal, the process slows down and can become a violation of the prompt offer requirement.

Before submitting "Official right-of-way Plans" for acquisition of right-of-way, the District should determine if final property owner contacts are needed. All property owner contacts should be by a team consisting, at a minimum, of the project designer and R/W agent, with additional District personnel as deemed necessary. When a Final Owner Contact is made, a Right-of-Way Owner Contact Diary entry is required.

415.10 Right-of-Way Plans Submittal. Right-of-Way plans can be submitted as soon as the environmental document is approved. When final approval of the environmental document is expected within a reasonable time, Right-of-Way Plans can also be submitted to allow preliminary right-of-way to begin. Prior to the Final Design Review, there are two optional ways that right-of-way plans can be submitted. Engineers should analyze each project to determine which option is to be used. Many sets of plans have ended up being combined when the design and right-of-way features actually dictated separate plans. When Contract Project Plans are used as a base for separate right-of-way plans, reproducibles of these plans should be obtained at an early stage of preparation, to avoid having to remove unrelated material from the plans.

Option One: Separate Right-of-Way Plans Review

Whenever either the District right-of-way Supervisor or Senior right-of-way Agent determines it is necessary, a right-of-way plans review can be requested. The District will assemble data, prepare the plans, and submit preliminary right-of-way plans to the headquarters right-of-way section.

Separate right-of-way Plans are prepared on separate plan sheets and shall show all right-of-way, both old and new, and appropriate design data for the project. Plan sheets will be separate from the Roadway Group, and are to be included as part of the project construction plan set as indicated in this section.

Submittal for the review consists of the following:

- One complete set of 11 x 17 inches (279 mm x 432 mm) color plans, and
- All other data such as easements, etc., to support the plans review.

The review will be held in the District office where the project is being designed and shall include a representative from the headquarters right-of-way (Titles and Appraisal section), the District right-of-way Supervisor, and the project designer. Representatives from any other sections impacting development of right-of-way plans will be asked to attend. The District right-of-way Supervisor will make arrangements for a field inspection of the project prior to and in conjunction with an office review of the plans.

The discussions, recommendations, and comments made at the review will be recorded and distributed by the District right-of-way Supervisor.

After the District has reviewed the plans in conformance with the comments made, plans shall be finalized prior to the next design review.

Option Two: Combined Construction and Right-of-Way Plans Submission

Combined Construction and Right-of-Way Plans are plans that usually have a minimum amount of design and right-of-way data and both can be shown on the construction plans without having a crowded effect.

The District assembles the data and prepares the plans for the acquisition of right-of-way, including easements, permits, agreements and any substantiating documentation necessary for completion of the plans.

Usually right-of-way plans are printed from Final Design Review plans. The plans are submitted to the headquarters' right-of-way section for processing.

The following information will be included:

ITD and LPA Projects:

- One set each of 11 x 17 inches (279 mm x 432 mm) colored and white prints.
- One hard copy and one electronic copy of the description for each required parcel. These descriptions will be certified by District Surveyor. If the right-of-way requirement is described utilizing a legal description and not the highway plat filing process, the legal description must close at not less than 1:5,000 as per [Idaho Code, Section 55-1911](#).
- One copy of the last deed of record for each parcel (entire contiguous ownership).
- One copy each of all of the plats or platted subdivisions that are crossed by the new right-of-way.
- An Ownership Data Sheet for each parcel on the project.
- One copy of completed right-of-way checklists ([Figures 4-1 and 4-2](#)).
- Identify the date environmental document was obtained. Plans will not be submitted for right-of-way approval without an Environmental Document.



- The plan's cover sheet shall be stamped by the District right-of-way Agent to read: "Recommended for Approval as Official right-of-way Plans."
- Date of environmental document approval.
- Identify method proposed for right-of-way — donation, fee services, etc.

In addition to the above items, the following will be included for LPA projects:

- Name of LPA
- Type of funding — Federal participation in right-of-way, etc.
- Detailed right-of-way cost estimate
- Date public hearings or waivers completed
- Relocations involved, if any

right-of-way plans will not be accepted for processing without the ownership data form(s), title reports, the total ownership map and parcel tabulation listing, and current environmental documents. See checklist, right-of-way Plans, [Figure 4-1](#) and the total ownership map in [Appendix C](#) for the required data.

Figure 4-1

RIGHT-OF-WAY PLANS

SMALL SCALE TOTAL OWNERSHIP		PROJECT NO.		CHECKED	VERIFIED
	11 x 17 inches (279 mm x 432 mm) reproducible (any scale, one or more sheets for project)				
	Standard plans and profile sheet title box				
	Section and township lines and designations				
	Irregular lots with numbers, government lot numbers and subdivisions				
	Alignment with relocations which can be shown at map scale				
	Symbols for Access Control				
	Station ticks and numbers				
	Beginning and end of desired right-of-way acquisition				
	Railroads, towns, and major drainage and canals				
	Other major topographic features				
	Local road system				
	Total Ownerships involved				
	Parcel number and names of owners on each parcel				
	Ownership tabulation on sheet				
	Parcel number				
	Owner's name and contract purchaser, if any				
	Parcel identification number				
	Total ownership — area (per county records)				
	Right-of-Way — area				
	New				
	Existing				
	Remainders — area				
	Left & right if more than one new remainder on either side, use letters to identify				
	Easements				
	Permanent				
	Temporary and right of entry				
	Remarks (to explain apparent inconsistencies or special conditions)				
	Cross reference notes supplemental plan sheets for parcels too small to show on map				
Checked by:				Date	

415.11 Final Right-of-Way Documentation. While the foregoing would seem to cover most of the features shown on completed plans, there are still a great number of construction elements that pertain only to the roadway. These elements may take considerable time and may justify preparing separate right-of-way plans in advance of final design plans. If roadway construction elements are already on the plans, it is not necessary to remove them from the right-of-way Plan originals.

All plans and other data required in the submission of right-of-way plans shall be prepared and assembled in accordance with the instructions in this section. Each sheet is to be date stamped. An example of a right-of-way plan sheet is provided in [Appendix C](#), Plans.

A checklist, which has been provided as a design tool, can be used to ascertain if the necessary details have been accounted for on the plans. See right-of-way Plans Checklist, [Figure 4-2](#). A copy of the completed form should be submitted with the right-of-way plans.

Figure 4-2

RIGHT-OF-WAY PLANS CHECK LIST

PLAN		CHECKED	VERIFIED
	Drainage shown, including intermittent		
	Mark every station —Number every 5 stations		
	Equations of stationing		
	Bearings (check with adjacent projects)		
	CV data (deflection, degree, tangent, distant, length, radius, & super)		
	Station at PC, PT, & spiral points		
	Station & deflection at angle points		
	Right-of-Way lines & width at all breaks & beginning & end of each sheet		
	Symbols for access control		
	Utilities, present & proposed relocation with name of owner (by whom)		
	Vertical clearance of utilities		
	Railroads, showing name right-of-way, and encroachment		
	Fences, existing and proposed		
	Building & other topography (show move items)		
	Underground private utilities, well, etc., —existing and proposed		
	Shade & ornamental trees & stumps, showing removal or retention		
	Ditches, canals, streams, lakes (names & direction of flow)		
	Station, type, & symbol of drainage structure (both proposed & existing)		
	Channel change, small ditches, & dikes affecting property owners		
	Miscellaneous right-of-way items (symbol & note)		
	Marshes & swampy ground, cliffs, & bluffs		
	Present road, showing portion to be retained, abandoned, or obliterated		
	Towns (names-limits-names of streets, subdivisions, blocks, lots, & ties)		
	Section lines, showing corners found		
	Section & property line ties, adequate to write descriptions		
	Township & range		
	Section subdivisions, designation (as NE4 SW4 23 or government lot number)		
	County lines, state lines, ties		
	Land use, ownership, parcel number		
	Right-of-Way acreage data, if not tabulated on small scale map		
	Approaches with dimension (paved or unpaved)		
	North arrow		
	Sheet number in lower left corner (pencil)		
	Beginning & end project section, ties, & distance to adjoining projects		
	Easement, with dimensions, permanent & temporary		
	Right-of-Way widths against X-section, including slope rounding		
	Limits of cut & fill slopes, including designed approaches		
PROFILE		CHECKED	VERIFIED
	Ground line		
	Grade line		
	Percentage of gradient (three decimal places)		
	Special ditch grades		
	Length of vertical curves		
	Elevation of breaks & ends & centers of vertical curves		
	Station numbers every 5 stations		
	Equations of station & levels		
	Structures		
	Stationing of location (in agreement with plans)		
	Description & disposition of present structures		
	Description & size of opening		
	Symbols—correct stationing		
	Elevation high & low water		
	Beginning & end of project & ties to adjoining project		
Checked by:		Date	

415.12 Official Right-of-Way Plans Approval. Following review and approval of the plans, the plans will be stamped as "Official Right-of-Way Plans" by the Senior Right-of-Way Agent (Titles).

All correspondence must contain the Key Number of the respective project.

Following review and approval of the right-of-way plans, the District Right-of-Way Supervisor will request authorization for purchase by forwarding the approved plans to the Right-of-Way Manager with an accompanying letter.

A right-of-way Certificate is issued after all right-of-way has been purchased or legally obtained and all other requirements (certification of sources, utility relocations, and all permits acquired) have been assured.

415.13 Revisions to Official Right-of-Way Plans. After the Official right-of-way Plans have been approved, revisions to the right-of-way Plans must be accompanied by a completed ITD-405, Revision to Right-of-Way Plans. Revisions that affect utilities or the railroad, must additionally provide a separate set of white prints and reproducible showing the revisions to the Utilities Engineer. The revision box of the plan sheet shall be completed for each right-of-way revision.

The ITD-405 is prepared and distributed as follows:

- Originator prepares the original form and three copies. The originator submits the white, yellow, and pink ITD-405 copies to the headquarters right-of-way section for approval and retains the goldenrod copy.
- An 11 x 17 inches (279 mm x 432 mm) color print of the plan sheets highlighting changes involved shall be submitted for all changes.
- After inserting the revised sheets into the plans, the recorder transmits the pink copy to the originator as proof of execution of the revision on the plans. The recorder retains the white copy.
- If the revision is not approved, the Senior right-of-way Agent (Titles) shall return the entire submittal.

415.14 Preparation of Condemnation Court Exhibits. Prior to the preparation of exhibits using plans, description, and the title report, verify that the ownership of record and the required right-of-way are shown on the plans correctly.

- Identify parcel of official right-of-way plans located in the District right-of-way office.
- Compare official right-of-way maps to the current original plans located in District Design section to determine if all right-of-way information is shown on plans (i.e., irrigation and drainage features, approaches, property line, fences, topography), recorded subdivision or addition lots, blocks and their dimensions, government lots, easements and their purpose (permanent or temporary), etc.
- Use the current original plans and choose all sheets showing the parcel, including a title sheet and all plan and profile sheets.
- Request a legal description of the land required from the District Right-of-Way Supervisor or headquarters Right-of-Way, Titles section. If there are any easements involved, either permanent or temporary, request that the headquarters Right-of-Way, Title section furnish their descriptions.
- Remove all references to other parcel numbers, property owners and areas, and P/Ls from the reproducible.

- Add the property owner's last name, including parties of interest, if any, and parcel numbers to include the easements to the title sheet below the project and sheet number block. Do not include mortgagees, trustees, or lien holders. If the property owner is a corporation or partnership, use the full name (i.e., Gambles, Inc., or L & H Company, a partnership). If there are several parties involved, show Gambles, Inc., et al., or Greene, et al.

Prepare the condemnation exhibit legend. This information can be listed as follows:

- Project No. from the legal description (show Right-of-Way Project No. if different from Construction No.).
- Parcel No. or Nos. and Parcel ID Numbers from the legal description.
- Total Contiguous Ownership (dual units) from the official right-of-way maps and appraisal in the parcel file of the District Right-of-Way Supervisor (appraisal areas and total ownership areas should agree).
- New right-of-way to be Acquired (dual units) from the legal description (if description includes existing road). If description does not include existing road, do not include the word NEW.
- Acknowledged as Public Road (dual units) from the legal description.
- Total Area Required for Highway Right-of-Way new right-of-way plus area acknowledged as public road.
- Permanent Easement (dual units) from the legal description.
- Temporary Easement (dual units) from the legal description.
- Record Owners from the title report, negotiating agent diary, or request for condemnation.
- Contract Purchaser from the title report, negotiating agent diary, or request for condemnation.
- Parties of Interest from the title report, negotiating agent diary, or request for condemnation.

Refer to the plan sheet or sheets reflecting the parcel and determine which lines appear (such as centerline, partial control of access, full control of access, right-of-way line, and easement line) then include symbols in legend. The scale should be shown as: inch = _____feet (scale/mm = ____ meters).

On an 11" x 17" (279 mm x 432 mm) sheet of durable print paper, color as follows:

- Title Sheet -- underline in red the right-of-way Project No., the condemnee's name or names, and the Parcel No. or Nos.
- Outline in light green the total contiguous depicted on the sheet.
- Outline in red all the bearings and distances added to the plan sheet.
- Color in solid in dark brown all acknowledged as public road.
- Color in solid red the right-of-way required.
- Color in solid light blue any temporary easements.
- Color in solid orange any permanent easements.
- Color in solid lavender uneconomic remnants or land-locked tracts to be included in the condemnation action.

415.15 Right-of-Way Certificate. All construction projects require a right-of-way Certificate. The certificate verifies that legal and physical possession of the right-of-way has been obtained, or that all work to be done in connection with the caption project will be contained within the existing right-of-way. Clearance for relocation of utilities, material sources, hazardous materials and a statement addressing any displaced persons must also be included. A Right-of-Way Certificate is not required for materials purchase projects that do not involve right-of-way; i.e. railroad equipment, trucks, buses, plant mix, etc.

Right-of-Way Certificate for Federal-Aid Projects

On all Interstate federal aid projects, prior to advertising for construction, the Department shall deliver for approval to FHWA a certificate of right-of-way availability. The Department will also deliver all “Conditional” right-of-way certificates on federal aid projects for FHWA approval. Interstate and conditional federal aid project certificates shall be addressed to the Division Administrator, FHWA, and signed by:

- The District Engineer on projects contained within the existing right-of-way that involve no right-of-way acquisition. (See [Figure 4-3](#)) When utility agreements are pending, it will be identified as a conditional certificate.
- The Right-of-Way Manager on all other federal aid projects that have right-of-way acquisitions or donations.

On all Non Interstate federal-aid projects, which are not conditional, prior to advertising for construction, the Department shall deliver for approval to the Chief Engineer a certificate of right-of-way availability. Those certificates (see [Figure 4-4](#)) shall be addressed to the Chief Engineer, ITD, and signed by:

- The District Engineer on projects contained within the existing right-of-way that involve no right-of-way acquisition.
- The Right-of-Way Manager on all other federal aid projects that have right-of-way acquisitions or donations.

The Right-of-Way Certificate shall be submitted to the Area Design Engineer to make proper distribution.

Right-of-Way Certificate for State-Aid Projects

On all State-Aid projects (see [Figure 4-4](#)), the Right-of-Way Certificate will be addressed to the Chief Engineer and issued by:

- The District Engineer on projects contained within the existing right-of-way that involve no right-of-way acquisition.
- The Right-of-Way Manager on projects that have right-of-way acquisition.

Right-of-Way Certificate Responsibility

The following people are responsible for the preparation of Right-of-Way Certification:

- *Right-of-Way Required for Highway Project:* The headquarters Right-of-Way Manager shall issue the project right-of-way Certificate on all projects requiring acquisition, after completion and prior to advertising for bid. This applies to federal-aid projects, state-aid projects, and includes local public agency projects. For local public agency projects, the District Right-of-Way Supervisor shall certify to the Right-of-Way Manager (See [ITD-1983](#)) that said political subdivisions have complied with the requirements governing appraisal, acquisition, and relocation.
- *Right-of-Way Not Required:* The District Engineer shall issue the right-of-way Certificate when no additional right-of-way is required and certification of material sources and utility relocations have been assured. This includes local public agency projects where no additional right-of-way is required.

Whenever a right-of-way Certificate is prepared on a LPA project, an [ITD-1983](#), Local Public Agencies Certificate of Completion, must also be submitted.

415.16 Right-of-Way Through Federal Lands Transfer Process. Either the U.S. Bureau of Land Management or Forest Service are responsible for U.S. Public Lands under its jurisdiction and have special requirements for right-of-way transfer. The District prepares a reproducible right-of-way map and transmits it to the headquarters right-of-way section to request that the right-of-way be obtained. The right-of-way section provides FHWA the map and the easement deed.

415.17 Advanced Right-of-Way. In cases such as corridor preservation, hardship acquisition, or on large projects that the right-of-way phase is going to take longer than the final design phase, the purchase of properties can be justified, on a case by case basis, to begin as soon as the environmental documentation is complete.



(Print on Department Letter head)

CURRENT DATE

Mr. Steve Moreno
Division Administrator
Federal Highway Administration
3050 Lakeharbor Ln.
Boise, Idaho 83703

RE: Project No.: IM-NH-IMG-IG-IRG-I-2222 (020)
Key No.: 2222
Project Name: Interstate Project Anywhere Idaho

RIGHT OF WAY CERTIFICATE

This is to certify that all work to be done in connection with the caption project by the IDENTIFY AGENCY will be contained within the existing right of way.

The utility facilities owned by IDENTIFY UTILITIES are to be relocated at company OR state expense and arrangements have been made to coordinate their activities with the contractor.

Materials are available to the contractor from a state approved commercial source OR a state source.

No persons, families or businesses were displaced from their dwellings as a result of this project.

Idaho Transportation Department has no knowledge of any hazardous materials use or contamination on this project.

AUTHORIZING INDIVIDUAL

District Engineer

XXX: xxx

bcc:	ACE/D	RW SUPV
	DE-#	RD/LR
	PDE-#	LEGAL
	R/W-#	UTIL
	FHWA	PF

Figure 4-4



ITD-500 4-93			
IDAHO TRANSPORTATION DEPARTMENT			
Department Memorandum			
DATE:		Project No.(s):	
TO:	JIMMY D. ROSS CHIEF ENGINEER	Key No.(s):	
FROM:	LEONARD g. HILL RIGHT OF WAY MANAGER	Project Identification, County, Etc.:	
RE:	RIGHT OF WAY CERTIFICATE		

This is to certify that all work to be done in connection with the caption project by the IDENTIFY AGENCY will be contained within the existing right of way

The utility facilities owned by IDENTIFY UTILITIES are to be relocated at company OR state expense and arrangements have been made to coordinate their activities with the contractor.

Materials are available to the contractor from a state approved commercial source OR a state source

No persons, families or businesses were displaced as a result of this project.

Idaho Transportation Department has no knowledge of any hazardous materials use or contamination on this project.

AUTHORIZING INDIVIDUALS NAME
DISTRICT ENGINEER

XXX: xxx

cc:	ACE/D	RW SUPV
	DE-#	RD/LR
	PDE-#	LEGAL
	R/W-#	UTIL
	PF	

SECTION 420.00 – MATERIALS SOURCE LOCATION AND ACQUISITION DATA

The District shall locate, investigate, and establish material sites to be purchased or leased for project use. Appropriate parts of the Materials manual and right-of-way procedures handbook shall be used to meet this requirement. In establishing the boundaries, shape, and size of the material deposit, the following shall be considered:

- Pit boundaries should be symmetrical where conditions permit. Boundary lines may be parallel to highway right-of-way lines or to the political subdivision. Do not sever or isolate small parts of an ownership, which may add to the cost, yet be retained by the landholder.
- Investigate ownership boundaries and study effect on the complete parcel.
- Give consideration to purchase or long-term lease on land for access road. Be sure that means of access is shown on the pit site sketch. Outline the proposal in the letter of request for acquisition.
- Consider the materials source as a future stockpile site or maintenance area.
- If a portion of an existing right-of-way is to be used as a materials site, check with the right-of-way section to determine how the original acquisition was made. If the right-of-way was part of a governmental land withdrawal for right-of-way, a supplemental withdrawal is required to convert this land to a materials site. (The use of right-of-way granted under our old right-of-way deeds for materials sites would be questionable and could be contested as the granting clause in the deeds read, "for a right-of-way for a public highway.")
- Arrange for a complete site survey to secure a good legal description for deed and monumenting purposes.
- Where a new tract purchase is to be added onto a previous right-of-way or site purchase, survey information must be compatible. Bearings, distances, and curve data must be identified with the deed descriptions of the original purchase. Check the records for existing property descriptions. Adjust survey data along the lines common to the old and new purchase. Make any necessary survey closure corrections in the outer limits of the new land purchase.

420.01 Materials from State-Owned or Controlled Sources. When materials from sources owned or controlled by the Idaho Transportation Department are offered to a contractor for incorporation into the construction of project, the following shall apply:

- The material should be listed in the Special Provisions as "At cost of \$0.65 per cubic ton (\$0.85 per cubic meter), payable to the Idaho Transportation Department ."
- Values should be shown for tax purposes even if state reimbursement is zero. Reimbursement is based on accounting records and approved by FHWA. The Materials report should list the amount to be used in the above situations.
- Material offered to the contractor from sources owned by the State Land Board is to be established in the Special Provisions at a unit cost, payable electronically to the Idaho Transportation Department regardless of the type of project involved, and based on the price per unit as established by the lease agreement with the State Land Board.
- Material furnished by the state for Stockpile shall be at no cost to the Contractor. Reimbursement for this material should be listed in the Special Provisions for tax purposes and shown on the Preliminary Cost Estimate under "Material Furnished by State" (to include cost of material plus 15% for the state's overhead).

SECTION 425.00 – CONTOUR DESIGN

The development of contour grading and drainage plans is a technique long practiced in the design of a wide variety of projects and is recommended for the development of integrated design as a prelude to highway beautification. Contour grading and drainage plans are very advantageous for highway projects, particularly for complex urban or interstate design. Plans for contour grading and drainage shall be prepared for all interchange and other special areas including new alignments, at-grade intersections, grade separations, bridge sites, roadside service and rest areas, and borrow and waste areas.

The objective is to correlate the design and construction elements with each other and with the topography, to reduce maintenance, to increase safety, and to improve the appearance of the entire area. Contour lines shall be developed so as to have lines that are flowing and that well rounded curves are provided at junction points, and where a structure and roadway meet.

Contour plans provide a three-dimensional total design concept that :

- Gives visual proof of the correlation of proposed construction with existing topography and adjacent environment;
- Facilitates the visual study and review of the plans, in-the-field inspection, construction, and later for maintenance;
- Provides a basis for the design of seeding and planting plans; and
- Includes ditch designs addressing rockfall mitigation and erosion control where appropriate. Refer to the Materials Phase II report or special geotechnical report for further information.

Design control information for contour grading plans is developed from computer data. In the case of consultant designs, the Designer should supply the following information to the District for preparing a template of the road section:

- Profile grade lines on the roadway and ramps.
- Ballast depths.
- The bottom of the ditches; crown for subgrade, subbase, base, surfacing; slopes; etc.
- Lines on which elevations are to be shown including center line or control line.
- Any other special design information considered necessary.

SECTION 430.00 – SLOPE DESIGN

Refer to Materials Phase II, IV, and/or Special Geotechnical reports as appropriate. Also, see Standard Drawing P-2-E, Permanent Erosion Control Roadside Slope Treatment.

The steeper the slope and the more severe the water problems, the greater the need for proper slope design. Serrations and minibenches are most commonly used to stabilize slopes, assist in seeding, control water runoff, and reduce erosion. Major benches are a structural feature intended to increase stability of very steep slopes and their use is highly dependent on the geologic structure and materials. Interceptor ditches are one method of controlling runoff over cut slopes.

430.01 Serrations, Minibenches, and Major Benches. Serrations are defined as having horizontal and vertical dimensions each of less than 1 foot (0.3 m), while minibenches are defined as having horizontal and vertical dimensions each of more than 1 foot (0.3 m), with 4 feet (1.2 m) being the largest optimum size. Major benches (have horizontal and vertical dimensions of more than 4 feet (1.2 m), usually 10 feet (3 m) are often applied as a standard unless there are recommendations in the Materials reports to the contrary. Major benches should be designed on an individual project basis. Refer to Materials Phase II, IV, and/or Special Geotechnical reports as appropriate for specific recommendations.

Major Bench Considerations

The benches are to remain functional indefinitely and will require maintenance. A design accommodating access to the major benches for maintenance purposes is necessary. In many instances, major benches can reduce local stability and create maintenance problems. Accumulations of material on major benches may act as a ramp to launch rocks into the roadway. Major benches constructed in adverse geologic structure can increase the potential for slope failure. Increases in ditch width may be more effective in retaining rock-fall than major benches. Refer to the Phase II Materials Report or Special Geotechnical Report for specific recommendations.

430.02 Design Options for Slopes. Recommendations regarding slope stability and slope design are typically contained in the Phase II Materials report. In special cases involving very steep or high slopes and unusual geologic or drainage conditions, it may be necessary to refer to a Special Geotechnical Report prepared for that specific portion of the project.

To determine the need for slope design with respect to vegetation reestablishment, slopes may be separated into three (3) types:

- *Sloping* (3:1 [1:3] or flatter) (Sloping areas normally **should not** be serrated or minibenched since conventional tillage equipment can be used and topsoil, if used, will stay in place on a roughened surface and water can be controlled by cross-slope tillage.)
- *Steep* (steeper than 3:1[1:3] to 2:1 [1:2]) (Steep slopes may be considered for either serrating or minibenching.)
- *Very Steep* (steeper than 2:1 [1:2]) (Very steep slopes should be considered for minibenching in almost all cases and major benching in specific areas. In areas of high moisture, vegetation establishes well for a distance of 30 to 40 feet (9 to 12 m) on the slope immediately below a major bench that diverts the water runoff. However, treatment should be coordinated with geotechnical requirements.) Slopes steeper than 4/3:1 (1:4/3) are typically in rock which may require blasting to remove. Serrations or minibenches will be extremely difficult and expensive to construct on slopes requiring blasting (particularly pre-splitting) and would have minimal value.

Additionally, when planning the size and design of various slopes, three (3) variables that should be considered are material, water, and vegetation. The following questions should be answered when designing slopes.

Material

- Is the material suitable for serration or minibenching?
- Is the material prone to rock-fall?
- Is major benching feasible or desirable

These questions will be addressed in the Phase II Materials Report or a special geotechnical report.

Water

Refer to the Materials Phase II Report or Special Geotechnical Report.

- Should water be removed or retained?
- Is the area subject to cloudbursts or heavy snow?
- Will underground water seep out on the slopes?
- Is it a low-moisture <15" (<375 mm) or a high-moisture >15"(>375 mm) area? (Check mean annual precipitation.) A general guide is under 15" (375 mm) retain water; over 15" (375 mm) divert water.
- Is the material particularly susceptible to erosion?

Determine the water source. If diversion is desired, refer to the Phase II Materials Report or Special Geotechnical Report and design accordingly.

Vegetation

- Can a good cover be obtained?
- If so, what kind of vegetation is suitable for the location and feasible for the conditions?
- What will the appearance and function of the cover be like after a few years?
- Can top soil be used to assist in re-vegetation? (A thin layer of topsoil 1 inch to 2 inches (25 mm to 50 mm) is especially valuable on rocky benches and particularly south-and west-facing slopes, but care should be taken to not apply so much topsoil that the value of the benches is destroyed.)

When these questions are answered and conditions and needs are properly correlated with each other, the slope configuration can be designed to best stabilize the disturbed soil or rock and provide good seeding conditions. Access to major benches for both construction and maintenance equipment should be provided. A water disposal system at one or both ends consisting of a suitable waterway with erosion controlled by channel liners, seeding, or other suitable treatment should also be added. Serrations and minibenching should also be noted. Refer to Standard Drawing P-2-E.

SECTION 435.00 – LANDSCAPING

A landscaping project is defined as "any action taken as part of a highway construction project, or as a separate action to enhance the aesthetics of a highway through the placement of plant materials consistent with a landscape design plan." Idaho's landscape projects are normally confined to rest areas, urban areas and interchanges and differ from roadside seeding that is primarily for erosion control and roadway side soil stability.

All work performed in association with the landscaping action shall be included in the total landscaping expenses. Functional planting shall be on the basis of engineering judgment and may include planting for erosion control, headlight screen, noise barriers, traffic safety, noxious weed control, roadway delineation, aesthetics, etc.

435.01 Roadside Landscaping. Projects for roadside landscaping shall be included in the annual construction program to allow the project costs to be viewed in proper perspective to the overall construction program. Unless otherwise specified, the degree of landscaping will be limited to what is necessary to ensure that the appearance of the highway is compatible with the aesthetics of the surrounding area. (See [Administrative Policy A-14-07](#), Landscaping, and the AASHTO Publication, "*A Guide for Landscape and Environmental Design*.")

Local agencies shall be contacted before projects are designed for roadside landscaping. Landscaping shall be included in a project when a local agency requests it and enters into an agreement with the department to assume full responsibility for all future maintenance of the landscaping.

435.02 Urban Structures Landscaping. The following procedures and standards shall be applied to interchanges, bridges and similar large structures when landscaping on an urban project has been approved.

- The proposed structures shall be given special study as to their form and composition of construction materials, to ensure a pleasing appearance and harmony with the surrounding area.
- The earthwork incident to any structure will be designed to use "contour grading and drainage plans" so as to blend with the surrounding topography. The earthwork will have rounded and gentle slopes and be covered with a layer of topsoil of sufficient quantity and depth to support a good vegetation cover.
- The availability of irrigation water will be one of the factors in determining the type of vegetation to be established. Water sources may be secured with the project right-of-way, or be furnished by the community. If a sprinkler system is to be installed, a determination of the water source must be made.
- Vegetative cover must be planned and designed to prevent erosion by wind and water, reduce weed growth and fire hazard, and promote aesthetic values.
- Additional vegetation may be planned and designed to delineate structures and their approaches, reduce headlight glare, screen adjacent areas, provide barriers, etc.

435.03 Reclamation of Material Sources. All ITD materials sources, either owned or leased by the department will be reclaimed by vegetative or landscape means when the source site is retired. Source reclamation will include cleanup, leveling, smoothing of pit floors, and resloping of banks to a 2:1 (1:2) or flatter slope whenever feasible. Top-soiling and seeding may be needed for sources where portions of the source have been depleted and can be restored to a natural appearance. A reclamation plan is required, prior to the operation of the materials source, and this reclamation plan will be submitted to the Idaho Department of Lands (DOL) for final approval.

For Federal-Aid Highway Systems, all new material sources shall be located out of sight of the main roadways, unless economic consideration prohibits. This setback restriction applies **not** only to sources that are purchased, but also to sources that are used under a lease arrangement. Existing sources that are along the present highway and must be used because of the State's investment, or new sources in view of the highway that are used because there is no feasible alternate, are to be given special landscaping treatment.

Gravel bars in and along rivers are excluded where excavation can be done in a manner that will not change the natural appearance of the river channel. When channels are present, emphasis must be placed on obliterating apparent damages from the excavation operation.

Reclamation shall be done upon closure and prior to disposal of the site if it is determined by the department that the material site is no longer operational or of benefit to the department. Beneficial uses such as potential use of the site for wetland mitigation, stockpile location, future construction staging area, etc. may be considered.

Each material source may receive different or special revegetation considerations depending on location or ownership of the site. Partial reclamation may be needed for source sites where portions of the source have been depleted. All source reclamation should be incorporated into highway construction contracts whenever feasible.

For more detailed information on materials source reclamation and operation, contact the District or headquarters Materials Engineer or refer to the Materials manual.

The department has a Memorandum of Understanding with DOL to allow retirement of our own material sources, but we must notify DOL that the site is being retired.

435.04 Wildflower Planting Requirements. All landscape projects require the use of wildflowers, however, waivers can be granted by FHWA when the state certifies that native wildflowers or seedlings cannot be grown satisfactorily, available planting areas are scarce, or available planting areas will be used for agricultural purposes. Waivers must be considered on a project-by-project basis. Idaho's wildflower planting approach will be to comply with the wildflower requirements in a positive manner on all landscape projects. The department does not intend to try for a waiver or to do only the minimum required amount (1/4 of 1% of the landscaping costs), but wants to develop well-planned wildflower seedings and/or planting on each landscape project.

The planting of wildflowers within the highway environment should be accomplished through proper planning and forethought, not haphazardly. According to the 1987 Surface Transportation and Uniform Relocation Assistance Act (STURAA) federal-aid projects must comply with "Guidance Material on the Wildflower Planting Requirement" (see [Figure 4-5](#)).

In general, planting areas are those locations within the highway right-of-way where landscape design, highway maintenance, and topographical features are conducive for planting wildflowers. Similarly, wildflower planting areas in an urban setting may differ from rural settings. The following criteria should be considered for wildflower planting sites:

- Visible to travelers
- Accessible to follow-up care
- Outside the functional roadway zone (beyond the foreslope)
- Soil that lends itself to proper seed bed preparation or rocky or sandy areas where seeds will plant themselves or lodge in crevices
- Free of invasive or noxious plants
- Low-erosion risks

The "native seed" lists (see [Section 440.07](#)) for south and north sites are the basic guides for species selection for landscape wildflower plantings. Do not apply grass or fertilizer to the wildflower areas. Limited noninvasive grass can be included. Certified noxious weed-free mulch should be used. Extra care should be taken with regard to weed control. Spraying, tilling and fumigating may be utilized to remove all weeds and weed seeds from these selected areas prior to planting. Additional species may be included as desired and as conditions warrant. Limited irrigation, when provided; can increase the range of flowers that will grow. If no supplemental water can be provided, the listed species should be adhered to.

Any species used in addition to those shown in the standard lists should be indigenous or naturalized varieties. Generally, any "wildflowers" selected should have their origin in the Intermountain Region. Do not use "exotics" and be sure selections are not from endangered, invasive, or noxious categories. Cost of seed can also be a factor as to the suitability of a species.

Figure 4-5

**GUIDANCE MATERIAL
ON THE
WILDFLOWER PLANTING
REQUIREMENT**

OFFICE OF ENVIRONMENTAL POLICY
ENVIRONMENTAL ANALYSIS DIVISION

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GUIDANCE MATERIAL ON THE
WILDFLOWER PLANTING REQUIREMENT

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STATUTORY REQUIREMENT

Section 130 of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURAA) amended 23 USC, Section 319 by adding a requirement that native wildflower seeds or seedlings, or both, be planted as part of any landscaping project undertaken on the Federal-aid highway system. At least 1/4 of one percent of funds expended for a landscaping project must be used to plant wildflowers on that project. This provision requires every landscaping project to include the planting of native wildflowers unless a waiver has been granted. Federal-Aid Highway Program Manual, 6-2-5-1, has been changed to reflect the STURAA amendment.

OPERATION WILDFLOWER

The Federal Highway Administration has administered a voluntary, cooperative program titled "Operation Wildflower" with the National Council of State Garden Clubs and State highway agencies since 1973. Unlike Operation Wildflower, the program requirements of STURAA **are mandatory**. STURAA does not prohibit the acceptance of native wildflower seeds or seedlings donated by civic organizations or other organizations or individuals to be used in landscaping projects. State garden clubs may continue to pay for or supply wildflower seeds or seedlings. Neither the donated funds, nor the value of donated plant materials can be counted toward the minimum expenditure required by STURAA.

The new program requirement does not discontinue the program policies of Operation Wildflower.

Federal funds are still available for participation in the cost of planting wildflowers supplied by garden clubs and other organizations or individuals, even though the planting may not be part of a landscaping project.

LANDSCAPING PROJECTS

The wildflower planting requirement is applicable only to landscaping projects, not every Federal-aid highway construction project. A landscaping project is defined as "any action taken as part of a highway construction project or as a separate action to enhance the aesthetics of a highway through the placement of plant materials consistent with a landscape design plan."

Seeding, temporary or permanent, undertaken for erosion control purposes does not constitute a landscaping project. This would include projects that do not have any plant materials (i.e., plants, shrubs, bushes, trees, etc.) involved in the planting, but would only entail seeding or sodding to revegetate disturbed areas. Similarly, planting vegetation to screen certain areas or activities from view does not constitute a landscaping project. Activities falling within this category include screening for headlight glare and junkyard screening. In these instances, vegetative materials are primarily used to serve as a visual barrier rather than an act of landscaping. However, when plant materials are combined with other screening elements (walls, fences, berms, etc.) to enhance their visual quality, the planting is considered landscaping and is to be treated as a landscaping project.

States are not prevented from planting wildflowers on highway projects as part of their erosion control measures. Additionally, a State can establish a landscaping project that involves only wildflowers. In this instance, the landscaping plant materials would be the different wildflower species. The project would follow normal procedures for programming landscaping projects.

EXPENDITURE FORMULA

The 1/4 of 1 percent expenditure requirement is intended to establish a minimum amount of project landscaping expense that is to be devoted to planting native wildflowers. If it chooses, a State can expend more than this amount. The expenditure formula is to be applied only to the cost associated with the landscaping project. It does not include the total highway construction cost. However, all work performed in association with the landscaping action is to be included in the total landscaping expenses. This would include, but is not limited to, costs associated with development of the landscaping design plan, site preparation, irrigation systems, purchase of plant materials, planting activities and plant establishment periods.

WAIVERS

The FHWA may grant a waiver to the wildflower requirement only when the State certifies that:

1. Native wildflowers or seedlings cannot be grown satisfactorily; or
2. There is a scarcity of available planting areas; or
3. The available planting areas will be used for agricultural purposes.

Waivers can only be considered on a project-by-project basis. The conditions on one project cannot automatically trigger a waiver on another, even when circumstances on one project are prevalent on another. Similarly, waivers cannot be based on geographic exclusions. That is, areas or regions of a State cannot be categorically exempted from wildflower planting.

Requests for waivers are to be forwarded to the FHWA Division Administrator for review and approval prior to the approval of the project's plans, specifications and estimate (PS&E). If the landscaping activities are being handled as a separate action, the waiver request should predate the PS&E approval for the landscaping project.

The States are to provide adequate information, justifying any waiver certification made concerning wildflower plantings. To simply state that wildflowers cannot be satisfactorily grown is not adequate to justify a waiver. There should be an identification of contributing factors that support this conclusion. Additionally, a waiver can be considered only on the basis of the three exemption criteria identified above. However, prior to issuing a waiver under criterion 2 or 3, clarification as to what shall be considered "planting areas" is needed. This is discussed in further detail in the section on Design Standards.

IMPLEMENTATION PLAN

Each State should develop an implementation plan for its wildflower planting activities. The plan should identify the procedures the State will follow to meet the requirements of STURAA. While the wildflower planting requirement is mandatory, the States are at liberty to use discretion in developing their programs. However, the implementation plan should, as a minimum, include:

1. Identification of native wildflower species that will be planted.
2. Design standards and specifications for wildflower plantings.
3. Development of a wildflower roadside maintenance policy.

Wildflower Species

Each State should establish its own definition of wildflowers. This can be done by identifying the wildflower species that will be used in the State's planting program. The FHWA has not defined, nor does it plan to define or issue policy on, what constitutes a wildflower. This procedure will also allow State highway agencies discretionary authority in the identification of those species that are native to their States.

Wildflower species are classified under three different categories:

- (1) indigenous, i.e., those that have grown in a particular location since earliest human habitation and cannot be traced to another place of origin;
- (2) naturalized, i.e., those that have grown for many years in a region but can be traced to another spot of origin; and
- (3) escapes or exotics, i.e., species that recently escaped from gardens and established themselves in fields and roadsides.

The States should use indigenous and/or naturalized species in their planting programs. The escapes or exotic species are not recommended. Similarly, the States should refrain from planting any species that are classified as endangered, invasive or noxious.

When selecting wildflowers, attention should be given to the characteristics of the species. It should be known whether the species are annuals or perennials and they are drought tolerant. The type of exposure the plants require, whether sun, shade or partial shade should be known. The blooming season, as well as the floral colors, is important. Care should be taken when considering native species on which very little information is available. In addition to other factors, some species may have a prolonged germination period. This would have a bearing on the visual effectiveness of the plantings and even the ability of the plant to survive amidst a competing plant community. There is also the factor of cost. The longer it takes a species to germinate, the less likely it will be available in quantity, thus making the cost of seeds more expensive.

Design Standards

The development of design standards is intended to identify where, when, and how wildflowers are to be planted. The standards also provide the necessary framework for the development of wildflower seed and bid specifications.

1. Planting Areas

The planting of wildflowers within the highway environment should not be done haphazardly; it should be accomplished through proper planning and forethought. This will necessitate giving greater consideration to the identification of wildflower planting areas. In general, planting areas are located within the highway Right-of-Way where wildflowers will be planted. Due to landscape design, highway maintenance, topographical features, etc., every location within the Right-of-Way is not conducive for planting wildflowers. Similarly, wildflower planting areas for projects in an urban area may differ from that of rural areas. The State should, with coordination of FHWA, establish an identification of planting areas that can generally be applied to all projects. This identification is also important for the certification process when applying for planting waivers. A waiver cannot be requested on the basis of a determination that there are no available planting areas until there is a clear understanding of what constitutes a planting area.

Design Standards (continued)

2. Planting Standards

Wildflower planting standards are necessary to ensure that proper procedures are followed in the actual planting of wildflowers. These standards are important to the contract bidding process and to the planting procedure to which the contractor must adhere. The standards should, as a minimum, identify when plantings should take place, the methods of planting and site preparation procedures.

When to Plant

The decision concerning when to plant wildflowers weighs heavily on the seasonal characteristics of the geographical areas within the State. Factors such as temperature and precipitation will be important. Additionally, a determination concerning spring or fall planting will have to be made. In some instances, there could be a variation between wildflower species where certain species are planted during spring and others in the fall.

Method of Planting

There are basically three methods of planting wildflower seeds: broadcast or hydro-seeding and drill seeding. The selection of one or a combination of these methods should not be done arbitrarily. Careful consideration should be given to topography, seed characteristics, and the accessibility of the area to be planted. Similarly, conditions associated with soils and seed germination characteristics could dictate the use of one method over another. Primarily, concern should be given to selecting a seed planting method that yields the most effective growth of wildflowers.

Site Preparation

Preparation of the site for planting is important to the successful germination and growth of wildflowers. To provide a base that permits good seed/soil contact, there need only be a very slight disturbance of the soil. It is not necessary, or desirable, to till the soil deeply. To do so will promote the germination of existing weed seeds and could affect the movement of moisture through the soil in arid climates. Only the top 50 mm of soil should be broken up. This could be done by shallow rototilling, using a flail mower or power raking. When planting in areas with existing vegetation, mow the vegetation as short as possible before proceeding with soil preparation.

3. Seed Specifications

The development of bid/seed specifications are necessary to ensure that quality seeds are obtained for the State's planting program. Generalized and unstructured bid specifications will usually open opportunities for below-standard wildflower seeds. The State should develop seed specifications that clearly outline the quality of seed that is wanted and not leave room for judgement or interpretation. The specifications should set realistic, acceptable minimums that will guarantee the best value, as well as quality, of seed.

Design Standards (continued)

3. Seed Specifications (continued)

Some standards that can be included in the specifications are:

- Requirements to meet State seed law.
- Requirement for prior germination testing in an approved certified seed-testing laboratory.
- Requirement that seeds meet a minimum acceptable germination standard.
- Date requirement for seed crop.
- Seed purity.
- Specific requirement for seed mixtures.

When listing the wildflower species to be purchased or planted, the species' full scientific name should be used. The list should be specific and should not leave room for substitute species, unless such is desired. In this instance, all acceptable substitute species should be identified. *In Idaho, the common name and symbol as shown in [Section 440.07](#), Native Seed List will be used.*

4. Planting Rate

For the best showing or visual effect, wildflowers should be planted at an appropriate planting rate. To a large extent, the conditions of the planting site and the method of planting will have a bearing on the planting rate. If a site is sloped, rocky or subject to erosion, or when planting is to be done by broadcast or hydro-seeding, the planting rate should be doubled or even tripled. A rate of 800 seeds/m² is recommended as standard.

It is possible to plant wildflower seeds too heavily. This often occurs when a mixture of seeds is being planted using the kilogram/hectare (pound/acre) method to formulate the mix.

It is not advisable to plant each species at the specified rate because overcrowding would result. The species that emerges first could shade or crowd out those species that take longer to germinate. The seed mixture should be carefully formulated with variable amounts or percentages based on the germination and growing characteristics of the species. This would produce a more balanced effect.

MAINTENANCE POLICY

The State's roadside maintenance policy should be examined to ensure that the policy does not conflict with the wildflower planting program. Coordination is very important to this process. The limits to which the rights of way will be mowed may need redefined and could also require designated mowing dates for wildflower-planted areas to promote natural reseeding. This is particularly important for many annual species. In most climates, the areas should be mowed in the fall after most flowers have finished blooming and have set seeds. The mowing will help scatter the seeds and promote germination in time for the next flowering season.

If the State actively uses herbicides to control vegetation in the right-of-way, a spraying limit or restriction should be established in locations where wildflowers have been or will likely be planted.

This precaution is necessary since wildflowers are not readily identifiable during nonflower periods. Wildflower growth can have a weedy appearance and mistakenly be sprayed.

SECTION 440.00 – ROADSIDE SEEDING

Permanent and well established vegetation has long been recognized as a key component in roadside soil stabilization, erosion control (water runoff, dust), sediment containment, beautification, wildlife habitat, and valuable ground cover. The department has long been on the forefront in adopting policies and practices that enhance roadside vegetation establishment, growth, and management. Revegetation or seeding of ITD property, along with the wise and discriminate reuse of stripped topsoil, should be incorporated into every applicable construction, materials source reclamation, right-of-way encroachment, and maintenance soil disturbing activity on all properties under ITD jurisdiction.

The term, “seeding” as used in this section, includes all the “classes” or practices (i.e., soil preparation, fertilizer, etc.) that will be used to obtain a desirable stand of vegetation on areas that have been disturbed by roadway construction. Seeding areas and classes should be selected with care. Additionally, beautification of certain areas is sometimes desired, but resources are limited. These “Special Areas” have additional considerations (see [Section 440.16](#), Special Areas) that may be used when developing suitable seeding and planting alternatives and their related costs.

440.01 Seeding Design Procedures. Once the contours, minibenching, serrations, and major benches have been determined (if required) for the project and/or landscaping projects have been designated, the following seeding design procedures should be considered.

- *Select the seeding sites* (foreslope, backslope, etc.) (most slopes are 6:1 (1:6) in current reclamation plans) that require seeding considerations. When appropriate specify Special Areas ([Section 440.16](#)) and Wildflower seeding sites (refer to the Wildflower Planting Requirement in [Figure 4-5](#)).
- Specify the *class of seeding* that will be used for each area by determining the amount of land and which practices (i.e., soil preparation, fertilizer, etc.) will be used to obtain a desirable stand of vegetation on each seeding site.
- Designate the *season of work*. The site type should be determined by referring to the "Mean Annual Precipitation" Map ([Figure 4-6](#)) and local precipitation forecasts. Then determine the season of work.
- Determine *fertilizer needs*. Determine the use of topsoil (overburden, if required) consisting of the "plow layer" or "A horizon" on the plans. Include the soil profile reports showing texture, fertility, and pH of the topsoil. Include Special Provisions for organic compost-based products and biological soil stimulants or amendments when needed.
- Determine the *standard seed mix* and whether to include natives, shoulder-foreslope mixes, and special use grasses and legumes. Note any shrub or tree seeds that are to be planted some distance from the roadway. The plans should specify that the contractor is required to furnish the cover crop grain seed for the project and this procurement is considered as an expense incidental to the project and no further charges will be made.
- Determine *mulch, mulch anchoring, and erosion blankets*, as appropriate.
- Include a *water plan* when establishment watering is needed, or a beautification project is planned.

Further explanations regarding each seeding practice continue in the following sections.

440.02 Seeding Site Selection. Seeding sites (foreslope, backslope, embankment, etc.) are primarily chosen to aid in roadside soil stability and erosion control. Designate the various categories that will be involved in the project.

440.03 Class of Seeding. The purpose of “class of seeding” is to designate the practices that will be used and to estimate the amount of land that will be involved for each seeding site in the project. Specific information about the various practices (soil preparation, fertilizing, mulching, etc.) are in following sections.

440.04 Season of Seeding. Since seedling survival is critical, it is advisable to give careful attention to selection of the proper season during which seeding work is permitted to ensure successful results. Even if all other specifications are correct, if the timing of the seeding is incorrect, the seedlings are likely to fail.

Although there is constant pressure to widen the seasons during which seeding work is permitted, a "best" time, usually a period of three to four weeks for sowing seed, should be used when planning roadside seeding.

Site Type Determination

The site type should be determined by referring to the Mean Annual Precipitation (MAP) ([Figure 4-6](#)). Each roadside seeding project will usually come under one of the following sites:

South Sites: <10"(<250 mm), and 10 to 15 inches (250 mm to 375 mm) MAP

North Sites: 15 to 20 inches (375 mm to 500 mm), and >20 inches (>500 mm) MAP

The terms "south" and "north" are for identification of the site only to indicate that the bulk of the seeding sites are either in the “south site” or the “north site” precipitation range. Some judgment, particularly where the MAP of a project might fall between the two sites is required to decide which mix to use or whether to combine the mixes.

MEAN ANNUAL PRECIPITATION MAP

Usually the site type that is picked can be used to determine the season of work and to select the seed mix. On dry-land grass seedings, Idaho can be satisfactorily divided into three (3) seeding seasons (South-Fall, North-Fall, and North-Spring) as follows:

South Site Seeding Season	
MAP	Fall Seeding Season
<10" (<250 mm)	Oct 1 to March 31
10"-15" (250-375 mm)	Oct 1 to April 15
North Site Seeding Season	
MAP	Fall Seeding Season
15"-20" (375-500 mm)	Sept 15 to May 15
>20" (>500 mm)	Sept 15 to May 30
<i>For the 15"+(375 mm) or more zones, where chances of early fall moisture are good, two possibilities can be used — seed as early as possible to take advantage of early fall moisture with time for establishment before freezing weather arrives; or delay as long as possible and still have time to finish before bad weather begins and avoid losing newly germinated seedlings.</i>	
MAP	Spring Seeding Season (Use primarily for completion of jobs already started.)
15"-20" (375-500 mm)	Feb 15 to May 15
>20" (>500 mm)	March 1 to May 30

Generally, the greatest risk of loss when seeding in the fall is that the planting may be done at a time when there is sufficient moisture for germination, yet there will not be sufficient time for plant establishment before freeze-up. The new seedlings are likely to be lost by winter desiccation and frost heave. When seeding in the spring, the risk is that the planting may be done so late in the season that even though there may be sufficient moisture for germination, there is not sufficient time for plant establishment before the dry, hot weather arrives. The seedlings are then likely to be lost by summer drought.

For both fall and spring seeding, a minimum of 45 days growth is needed to assure seedling plant survival.

Be sure to allow sufficient time for work to be completed just prior to the beginning date. Mulches, erosion blankets, mulch anchoring, benching, and the increased effort to maintain flatter slopes allows for better erosion control and makes it more feasible to plan fall seedings in all locations.

When seeding grass, normally fall or dormant seeding is more successful on “south” sites and either fall or spring seeding can be successful on “north” sites. Seeding in north sites can be completed the following spring should it be impossible to finish the job in the fall as planned. In south sites, if the seeding is not finished in the fall as planned, completion may be delayed until the following fall, unless establishment water can be used. In certain circumstances seeding may be performed outside the season of seeding when fall seeding would be difficult or impossible or temporary seeding is required where compliance with the Pollution and Storm Water requirements are being met. Establishment watering may be required if seeding is performed outside the season of seeding.

Section 440.05 Fertilizer Selection.

Topsoil

One of the first considerations of determining the need for fertilizer or other soil enhancements is the use of topsoil. Topsoil contains essential nutrients, organic matter and soil micro-organisms necessary for proper plant growth and establishment. **In virtually all instances topsoil should be stockpiled and reused on the project to provide a better growing medium for new seedlings.** The topsoil layer can vary from a depth of 3 inches-24 inches (75 mm to 600 mm) or more, depending on the area. Should the pH level be above 7.8, the value of the material as topsoil is questionable. (Topsoil as used here is not to be confused with "select topsoil" as described under Section 711.09 of the Standard Specifications for use in planting beds. The select topsoil specifications should be used as a guide as to what good topsoil is.)

When planning for topsoil re-use for roadside seeding, use the "best" soil found on the surface in the construction area. Many areas to be seeded (especially cut slopes) are sterile and deficient in nutrients and micro-organisms because they are primarily subsoil. Assume that most top soil is better than any subsoil and make the best use of the material available.

The desired minimum topsoil depth is 3 inches (75 mm). Unfortunately, there is usually a shortage of topsoil sufficient to cover all areas, so it is more desirable to cover as much area as possible to a lesser depth. Even 1-2 inches (25 mm or 50 mm) will aid considerably. However, for planning purposes, try to cover all of the subsoil exposed area and make every effort to obtain the minimum 3 inches (75 mm) coverage.

A medium-textured soil is desirable; however, we have very little control over this. The important consideration is to exclude rocks and debris that interfere with seedbed preparation and seeding operations, and to have roughened surface conditions before applying the topsoil. The desired roughness is a series of horizontal serrations of 3-6 inches (75 mm to 150 mm) covering the entire area on which topsoil is to be placed.

A thin layer of topsoil (1-2 inches [25 mm to 50 mm]) is especially valuable on rocky benches and particularly south-and west-facing slopes, but care should be taken to not apply so much topsoil that the value of the benches is destroyed.

Fertilizer Application Determination

Application of fertilizer on disturbed areas to be seeded is beneficial to new seedlings if the proper kinds and qualities of fertilizer are specified. Failure to apply needed nutrients may result in poor establishment or complete failure of the seeding.

Organic -or compost-based products and biological soil stimulants or amendments that provide additional assistance or substitute for commercial fertilizer are now available and must be specified as a Special Provision. These products have proven to be very effective in establishing vegetation under adverse environmental conditions and can be hydro-applied in most instances. A one time application of organic-based compost, biological soil stimulant, tackifier(s), and seed eliminates separate seeding application and can reduce costs. The organic -or compost-based products can also replace mulching requirements.

Nitrogen needs in all soils must be determined by evaluating the available moisture as follows:

Mean Annual Precipitation	<10 inches (< 250 mm)	10 lbs per acre (11kg/ha)
	10-15 inches (250-375 mm)	20 lbs per acre (22kg/ha)
	15-20 inches (375-500 mm)	30 lbs per acre (34kg/ha)
	>20 inches (> 500 mm)	40 lbs per acres (45 kg/ha)

Some commercial fertilizers, especially nitrogen, leach out quite rapidly after application, so it is recommended that nitrogen fertilizer be specified as time, slow, or controlled release. The same nutrient requirements would apply.

After determining which moisture zone the area to be fertilized is located, consider the additional factors that may affect moisture availability:

- (1) other sources of water (ground, surface, establishment water, etc.),
- (2) soil type (sand, clay, etc.),
- (3) organic matter level (high or low),
- (4) the aspect of the site (south or north facing, etc.) and
- (5) other soil problems such as indicated by the pH (soil test), the presence of indicator plants, sterile subsoils, or parent material (where top soil is not re-used).

Soil tests should be done on the topsoil to determine nutrient levels and needs so fertilizer specifications can be based on those nutrient requirements and recommendations. Soil test results and nutrient requirements should be included in the Materials Phase II report. The General Soil Map for Idaho ([Figure 4-7](#)) has the best information available with regard to nutrient deficiencies as shown in the recommended nutrient list of the General Soil Legend ([Figure 4-8](#)). The quantities needed are given in the elemental form. Should it be necessary to determine the needs in compound form, as is often done with respect to potassium and phosphorous, multiply the elemental by 2.29 for P_2O_5 and by 1.25 for K_2O . However, for ITD's planning and design work, always use the elemental quantities. Contact the Roadside Manager in headquarters Maintenance section for assistance in determining required nutrients.

Figure 4.7

GENERAL SOIL MAP

GENERAL SOIL MAP

October, 1998

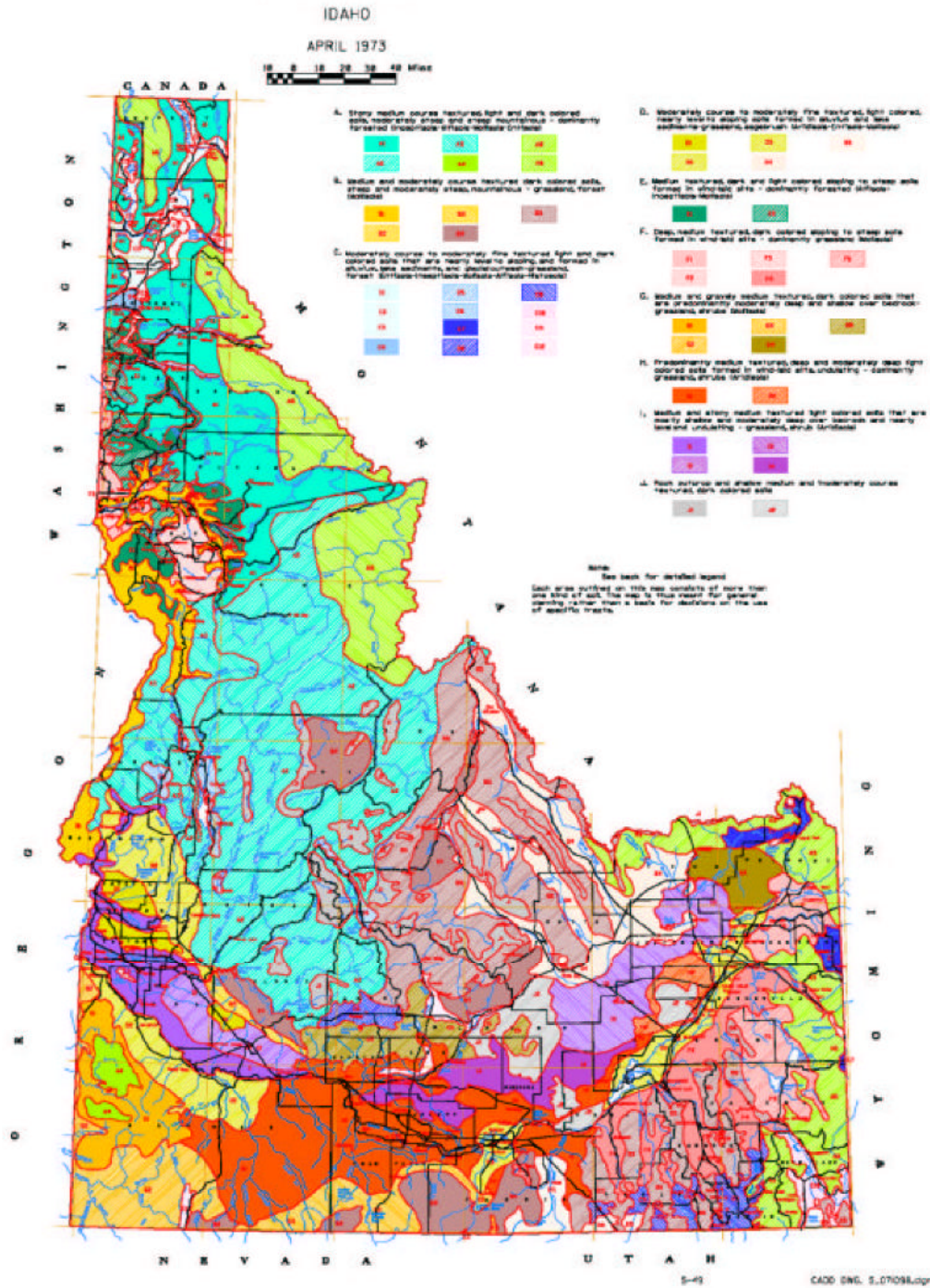


Figure 4-8

GENERAL SOIL LEGEND		
N (nitrogen), P (phosphorous), K (Potassium), S (sulfur), B (boron), and Zn (Zinc).		
Legend Symbol	pH Range	Recommended Nutrient
A	4.5-7.0	N - based on available moisture P – 35 lb/A (40 kg/ha) S – 10-15 lb/A (11-17 kg/ha) B – 1-2 lb/A (1-2 kg/ha)
B	6.0-7.5	N - based on available moisture P - 35 lb/A (40 kg/ha) K - 35 lb/A (40 kg/ha) S - 1-2 lb/A (1-2 kg/ha)
C ₁ -C ₇	5.0-7.6	N - based on available moisture P - 35 lb/A (40 kg/ha) K – 40 lb/A (45 kg/ha) S - 1-2 lb/A (1-2 kg/ha)
C ₈ -C ₁₂	6.5-8.5	N - based on available moisture P - 35 lb /A (40 kg/ha) K - 35 lb /A (40 kg/ha) S - 1-2 lb /A (1-2 kg/ha)
D	6.5-8.0	N - based on available moisture P - 35 lb A (40 kg/ha) Salt - can be excessive
E	4.5-7.0	N - based on available moisture P – 25 lb /A (28 kg/ha) S - 1-2 lb/A (1-2 kg/ha) B - 1-2 kg/ha
F	7.0-8.0	N - based on available moisture P - 1-2 lb/A (1-2 kg/ha)
G	6.5-8.5	N - based on available moisture P - 1-2 lb/A (1-2 kg/ha) Salts - can be excessive
H	6.5-8.5	N - based on available moisture P - 1-2 lb/A (1-2 kg/ha) Zn – 10 lb/A (11 kg/ha) Salts - can be excessive
I	6.5-8.5	N - based on available moisture P - 1-2 lb/A (1-2 kg/ha) Salts - can be excessive
J	6.0-8.5	Very Little Soil - primarily rock

440.06 Standard Seeding Mixes. Seeding preferably native dry-land grasses, forbs, and shrubs is the most effective method; however, several years are usually required for a satisfactory level of growth to be developed. After the seed bed is correctly prepared, the preferred method of seeding is drill seeding followed by either dry or hydro-seeding.

Each standard mix should include three grasses, one legume, and possibly two to four natives (forbs or shrubs) on each seeding project, and the standard mixes should be used in nearly all cases. Delete the legume from the mix where it would cause a maintenance management problem. Include natives where it is determined they would be beneficial and have good prospects of success. **Whenever natives or legumes are not included in the mix, the “primary” grass in each mix should be increased by 2lb/A (2 kg/ha).** A cover crop may be included for a quicker green-up or growth for erosion control and soil stability during seedling establishment. The cover crop grain seed should be obtained from a local source and shall be certified under provisions as established by the Idaho Crop Improvement Association.

Since the Department is furnishing the majority of the seed on future projects, there is no need to refer to quality of seed required and rates have been adjusted in the mixes so that they are shown according to “bulk seed” with no specification as to Pure Live Seed (PLS). PLS has already been factored into the department’s recommended seeding rates. The designer also has the option to require the contractor to furnish all or part of the seed on small construction projects where very little seed is required or where the seed specified is not available through headquarters’ PM&M section. Contractor-furnished seed must meet the same minimal requirements in respect to purity and germination as PLS as required by the department and should be specified.

Symbols for identification taken from: U.S.F.S. "Intermountain Range Plant Symbols," 1977, and SCS "Idaho Plant List," 1976.

South Sites (Standard Mixes)		
	Kg Bulk Seed Per Hectare	Lbs. Bulk Seed Per Acre
Mix #1 - <10 inches (<250 mm) Mean Annual Precipitation (MAP)		
Grasses		
"Covar" Sheep Fescue (FEOVO)	8	7
Siberian W.G. (AGSI)	8	7
"Ephraim" Crested W.G. (AGCR)	8	7
Legume		
Ranger Alfalfa (MESA)	1	1
Cover Crop		
Spring Wheat, Barley or Oats	5	4
Natives		
To be determined	1	1
TOTALS	31	27
Mix #2 – 10" to 15 " (250 mm to 375 mm) MAP		
Grasses		
"Sodar" Streambank W.G. (AGRI)	8	7
"Tegmar" Dwarf Intermediate W.G. (AGINI)	8	7
"Ephraim" Crested W.G. (AGCR)	8	4
Legume		
Ladak Alfalfa (MESAL)	1	1
Cover Crop		
Spring Wheat, Barley or Oats	5	4
Natives		
To be determined	1	1
TOTALS	31	24

North Sites (Standard Mixes)		
	Kg Bulk Seed Per Hectare	Lbs Bulk Seed Per Acre
Mix #1 – 15” to 20” (375 mm to 500 mm) MAP		
Grasses "Durar" Hard Fescue (FEOVD)	8	7
"Tegmar" Dwarf Intermediate W.G. (AGINI)	8	7
Canada Bluegrass (POCO)	5	4
Legume Ladak Alfalfa (MESAL) or White Dutch Clover (TRRE)	1	1
Cover Crop Spring Wheat, Barley or Oats	1	1
Natives To be determined	1	1
TOTALS	24	21
Mix #2 - >500 mm MAP		
Grasses "Durar" Hard Fescue (FEOVD)	8	7
"Fortress" Red Fescue (FERUR)	8	7
Canada Bluegrass (POCO)	5	4
Legume White Dutch Clover (TRRE)	1	1
Cover Crop Spring Wheat, Barley or Oats	1	1
Natives To be determined	1	1
TOTALS	24	21

440.07 Native Seed List. The rates per hectare for pure wildflower seeding are not specified and will need to be determined on a case-by-case basis. As shown on the Native Seed Lists, the wildflower seeds are classed as very small (VS), small (S), medium (M), and large (L) sizes. Additionally, annual wildflower seeds should not make up more than 25% of the total wildflower mix.

As a general guide for dry broadcast, “M” seed should be applied at 20 lb/acre (22 kg/ha) and “S” seed at 5 lb/acre (96 kg/ha). When wildflower varieties are combined a pro rata calculation would be required to provide approximately 70 to 80 seeds/ft³ (770-880 seeds/m²). Adjustment of rates may also be needed when methods other than drill seeding are used. Call the Roadside Manager in headquarters Maintenance section for assistance.

NATIVE SEED LIST		
* VS = Very Small; S = Small; M = Medium; L = Large		
South	Seed Size*	Seed
Perennial Wildflowers	S M S M S S M	Palmer Penstemon (PEPA) Western Yarrow (ACMIL) Eaton Penstemon (PEEA) Small Burnet (SAMI) Globe Mallow (SPMU) Purple Prairie Clover Lewis Flax (LILE)
Annual Wildflowers	S M S	Farewell to Spring (CLARK) California Poppy (ESCA) Blazing Star (MELA2)
Shrubs	VS L L L S M L	Basin Big Sage (ARTRT) Curleaf Mtn. Mahogany (CELEL) Fourwing Saltbrush (ATCA) Shadscale (ATCO) Rabbitbrush (CHRY3) Winterfat (CELAL) Antelope Bitterbrush (PUTR)
Trees	M L M M	Rocky Mtn. Juniper (JUSC) Ponderosa Pine (PIPO) American Plum (PRAM) Siberian Pea Tree (CAAR)
North	Seed Size*	Seed
Perennial Wildflowers	S S S M S M	Rocky Mtn. Penstemon (PEST) Lance-Leaved Coreopsis (COLAZ) Alpine Penstemon (PENST spp.) Blueleaf Aster (ASGL) Showey Goldeneye (VIMUM) Blanketflower (GAAR)
Annual Wildflowers	S M M	Plains Coreopsis (COTI2) Corn Poppy (PARH) Blanketflower (GAPU)
Shrubs	M L L S L M	Dogwood (COSTS) Chokecherry (PRVIM) True Mahogany (CEMON) Blueberry Elder (SACE) Rocky Mtn. Maple (ACGLG) Mtn. Ash (SOSCS)
Trees	S S M L	Willow (SALIX spp.) Lodgepole Pine (PICO) Grand Fir (ABGR) Douglas Fir (PSMEM)

440.08 Shoulder-Foreslope Mixes. Many projects should use two mixes; the shoulder-foreslope mix and the standard mix for all other areas to be seeded. Select the two most suitable grasses from the "shoulder-foreslope grass" list for planting from the pavement edge out to a distance of up to 12 feet (4 m). Usually this will be the foreslope area to near ditch bottom. No legumes or natives are to be included in these shoulder-foreslope mixes.

Shoulder-Foreslope Grasses	
Grass	MAP
Red Fescue (FERUR)	>20"(>500 mm)
Hard Fescue (FEOVD)	>20"(>500 mm)
Canada Bluegrass (POCO)	15"-20" (375-500 mm)
Western Wheat Grass (AGSMS)	10"- 15" (250-375 mm)
"Sodar" Wheat Grass (AGRI)	10"- 15" (250-375 mm)
"Covar" Sheep Fescue (FEOVO)	<10" (<250 mm)
Sand Dropseed (SPCR)	<8" (<200 mm)
"Ephraim" Crested W.G. (AGCR)	<8" (<200 mm)
Siberian W.G. (AGSI)	<8" (<200 mm)

440.09 Special Use Grasses and Legumes. If the site falls between site types, or special problems exist such as alkali, sand, or drought conditions, contact the Roadside Manager in headquarters Maintenance section for assistance in the use of "Special Use Grasses and Legume" and combining mixes.

*Special Use Grasses and Legumes	
Alkali Tolerant “Alkar” Tall Wheatgrass (AGEL3) Alkali Sacaton (SPAIA) “Lemons” Alkaligrass (PULE)	Other Small Burnett (SAMI) “Fults” Alkaligrass (PUDI) “Whitmar” Beardgrass W.G. (AGSPI) “Alta” Tall Fescue (FEAR3) ”Secar” Bluebunch W.G. (AGSP3) “Paiute” Orchard Grass (DAGL)
Sand Stilling “Volga” Mammoth Wildrye (ELGI) Indian Ricegrass (ORHYH) Sand Dropseed (SPCR)	
*Seeding rates on these special use species to be determined according to conditions on each project where they may be needed.	

440.10 Mulch – Mulch Anchoring – Erosion Blankets. Obtaining a good stand of vegetation may require the use of a mulch or an erosion blanket on all disturbed areas that are to be seeded to protect and enhance the establishment of permanent vegetation.

Mulch or erosion blankets are essentially applied and used:

- 1) to protect the seed and seedlings,
- 2) to conserve and retain moisture,
- 3) to reduce and control erosion, and
- 4) may provide additional nutrients.

The designer has several primary questions to address when planning for mulch.

- What areas should be mulched and with what kind?
- What areas should receive erosion blankets and what kind?
- How should the mulch be anchored?

440.11 Mulch. For seeding purposes, the decision to mulch must take into consideration conditions such as soil texture, slope, aspect, annual moisture or the erodability of the soil or site. The site or soil variation cannot always be reasonably isolated for different applications of mulch, however, consideration of these factors aids in making the correct decisions as to various methods and mulches available.

In general, mulch should be applied to slopes 3:1 (1:3) or flatter; while mulch or an erosion blanket or a combination of both should be applied to slopes 3:1 (1:3) or steeper.

There are numerous types of mulches that are being promoted and used for mulching. A brief and general description of mulches that may be used follows:

Gravel or crushed rock with aggregate diameters from ½ inch to 2 inches (13 mm to 50 mm) applied to a depth of 2" (50 mm) does a good job of conserving moisture and may be used where risk of erosion is high either due to wind or stormwater runoff. Unwashed material is acceptable and enhances vegetation establishment. *Seed should be applied after the gravel is in place instead of before.*

Grass hay or grain straw is the preferred mulch for slopes 3:1 (1:3) or flatter and should be mechanically crimped in. If conditions warrant it, a combination of crimping and tackifier may be utilized to hold the mulch. If grass hay or straw is applied on slopes 3:1 (1:3) or steeper, the mulch should be tackified or in some cases held down with a jute matting or comparable material. Both grass hay and straw provide nutrients to the soil as they break down, usually within two to three years. Grass hay or straw is readily available in Idaho and if specified shall be certified noxious weed free.

Organic- or Compost-based products have proven to be an effective mulch and should be considered on projects where application can be accomplished without damaging soil preparation. Application can now be performed by using spinner trucks, manure spreaders, blowers, and hydro applicators. The advantage to using compost, which maybe derived from almost any organic matter, is that compost retains and conserves moisture, increases the temperature of the soil, promotes desirable soil micro-organisms, provides additional slow release nutrients and will provide erosion control at higher rates. The primary concern should be the availability of compost and transport of the product to the site. New seed-meal/organic-based compost products are now available that can be hydro-applied at rates comparable to wood fiber mulch, rates.

Wood fiber or recycled paper (newsprint or cardboard) applied in most cases in a water slurry with a hydro applicator is convenient and the mulch of choice in many situations. These products and methods of application can place wood fibers or recycled paper in either a mulch or erosion blanket classification and can be used effectively for erosion control. Wood fiber or recycled paper fit in most instances on slopes 3:1 (1:3) or steeper and should be the mulch of choice when other equipment cannot get into areas to be

seeded or mulched. This water slurry method of application also applies to seeding and fertilizing. In almost all instances tackifier should be used to tie the mulch down. Tackifier can be applied separately over the mulch or maybe mixed with the mulch in a slurry and then applied to the site. ***Under no circumstances should fertilizer or seed be applied in combination with wood fiber or cellulose mulch.***

Wood chips or shredded bark are the least preferable mulch for several reasons, but can be used if the need arises. One of the biggest concerns is that wood chips or shredded bark can tie up nutrients or use nitrogen that should be available to the vegetation. Wood chips or shredded bark are good landscaping mulches, are cheap, and more plentiful in some areas; but difficulty in hauling and applying it to construction sites is a major drawback.

440.12 Mulch Anchoring.

Mechanical Anchoring is accomplished by using a crimper disc or other mechanical device to incorporate grass hay or straw into the soil. Mechanical anchoring should be used on slopes 3:1 (1:3) or flatter and be performed only cross slope to create small furrows. Mechanical anchoring using a crimper disc can be performed on slopes 2:1 (1:2) or flatter using the right type of equipment. On slopes 3:1 (1:3) or steeper cat walking or yo-yo crimping are the preferred methods of mechanically anchoring grass hay or straw.

Tackifier is used to create a bond in various mulches to prevent loss of mulch due to wind or stormwater runoff. This procedure must allow for the penetration and retention of moisture, cannot interfere with or be harmful (non-toxic) to plant or animal life, and be non-staining to concrete or painted surfaces. On critical erosion prone areas, mechanical anchoring and tackifiers may be used in combination with each other. In this case, the tackifier is applied as an overspray after the mulch has been mechanically anchored.

440.13 Erosion Blankets. Erosion Blankets, either roll out or liquid applied, should be used on slopes 2:1 (1:2) or steeper and especially where highly erodible soils are present. Other critical areas may be water ways or where blow sand is present on slopes 3:1 (1:3) or steeper.

There are many different types of erosion blankets on the market. The following is a brief description of some types of erosion blanket and their use.

Straw Blankets and in some cases straw/coconut blankets do an excellent job of conserving moisture and controlling erosion. Straw blankets may not be effective in helping establish satisfactory stands of vegetation.

Jute Matting or Jute Mesh should be used primarily in areas or situations where the need is to hold down a grass hay or straw mulch. The jute matting is used in lieu of a tackifier and where a tackifier is not likely to hold the mulch.

Excelsior Blankets performs better as an erosion control under high-intensity rains or winds, but is not as effective as straw blankets for establishing vegetation, has a tendency to wick the moisture out of the soil, and may tent up or not adhere to the ground.

440.14 Establishment Water. The use of establishment water, to supplement normal precipitation, for seeding dry land grasses on roadways has proven to be a valuable technique; but is not a remedy for all seeding problems and the watering systems remain very costly. This type of stand "insurance" can be a cheaper method than fighting the weeds and slow establishment or perhaps even a reseeding requirement. Good seeding techniques should not be shorted, nor the seeding seasons improperly stretched even where water is used.

The decision to use water should be based on careful analysis of all the conditions. Probability of adequate precipitation is a key factor in considering water application. The publication *Probability of Selected Precipitation Amounts in the Western Region of the United States* is the best guide for determining desired date, frequency and quantity of water application at any location under consideration as well as the nearest comparable local weather reports.

Reasons for considering water are:

- 1) Soil or site problems indicating seeding difficulty (blow sand or coarse droughty material, south and west facing slopes, or additional site factors);
- 2) Low expected MAP approaching the 10 inches (250 mm) level or a probable seasonal low (In these areas seedings are expected to fail unless above-normal moisture is received during the establishment period or establishment water is applied);
- 3) Conditions requiring the stretching of the normal seeding season; and
- 4) Beautification requirements or the need for rapid growth. (Rapid establishment of vegetation may be required where a better quality (thicker) stand is desired. Some species used for beautification require establishment water in certain locations.)
- 5) Should one or more of the above conditions exist, find out if there is an adequate source of quality water available during the period needed and determine delivery feasibility and probable costs. The most feasible and lowest cost method of delivering water to the area should be determined. Water may be applied by either a sprinkler system or water trucks or a combination of both.

Plan the application period to supplement precipitation expected during normal seeding seasons. To be of greatest benefit and to extend the establishment seasons, water should be scheduled just before early fall rains or just after late spring rains. Consider climate, weed competition, species and construction needs to determine whether to use spring or fall application.

Establishment Water Season-South		
MAP	Date to begin irrigation	
	Fall Season	Spring Season
<10 inches (<250 mm)	Aug 15	May 1
10 inches (250 mm)	Aug 1	May 15
Establishment Water Season-North		
	Fall Season	Spring Season
15-20 inches (375-500 mm)	Aug 15	May 15
>20 inches (>500 mm)	Aug 1	May 1

Each water application provided for in the watering schedule should usually be an application of 1Ac. Unit/Acre (one hectare unit). The following watering schedule will give the seeding 6 acre unit (six hectare unit) applications of water and should be adjusted to local conditions. For water applications that begins on August 15 the water application plan would be:

- 1st application — 1 Ac. Unit/Acre (1 hectare unit/hectare) — 4-day interval

- 2nd application — 1 Ac. Unit/Acre (1 hectare unit/hectare)— 6-day interval
- 3rd application — 1 Ac. Unit/Acre (1 hectare unit/hectare)— 8-day interval
- 4th application — 1 Ac. Unit/Acre (1 hectare unit/hectare)— 10-day interval
- 5th application — 1 Ac. Unit/Acre (1 hectare unit/hectare)
- Additional applications applied as directed.

440.15 Preparing an Establishment Water Plan. The plan can be simple or detailed, depending on needs and will include:

A Layout Map that may show:

- Source of water.
- Areas to be watered by sprinkler, acreage and volume of water required.
- Areas to be watered by trucks, acreage and volume of water required.
- Proposed routing of sprinkler lines.
- Proposed routing of haul roads.
- Pump locations.
- Dimensions of areas.

The Written Explanation may include:

- Estimated length of mainline and size.
- Estimated length of laterals and size.
- Estimated number of pumps and horsepower.
- Estimated number of each kind of heads and pressure required.
- Spacing of heads, diameter of circle, and overlap required. (Normally, plan a 50% of diameter overlap on the full and half-circle impact heads. Except in very unusual circumstances, these efficient heads should be the only type considered for use even though this may leave certain odd areas to be watered by truck.)
- Other (sump facilities, valves, etc.)

A detailed design is not needed in most cases. Plans and specifications shall provide sufficient information for general layout and quantities satisfactory for bidding purposes. For assistance, call the headquarters Maintenance section.

440.16 Special Areas. Where there is a desire for some beautification, but resources are limited, the following guidelines should be used to assist in developing suitable seeding and planting alternatives and their related costs. The use of these guidelines allows a "safe" level and some flexibility, either up or down, should desires change in future years.

Generally, there are only two alternatives for quality turf development:

- Standard dry-land seed mix which is oftentimes not successful and results in a poor-quality turf with related undesirable weeds, or
- Lawn grass seed and fully irrigate which although provides good quality turf is costly to establish and requires a high degree of maintenance.

The following alternatives, if understood and used, allow for most needs, construction, and maintenance resources to be satisfied. The alternatives are listed in the order of decreasing cost.

- **High-Level Maintenance**

High-level normally involves the seeding of a good lawn grass (usually bluegrass); installation of a complete, permanent irrigation system (irrigation interval one to two weeks); very frequent mowing (one-to two-week intervals); and planting suitable shrubs, ground cover and trees as desired. This level gives the designer the greatest flexibility in formal planning and choice of planting materials; however, construction costs are much higher and maintenance costs remain high with little flexibility over the years.

- **Medium-Level Maintenance**

Medium-level is based on the seeding of the proper primary grass; installation of a permanent, minimal irrigation system (irrigation interval two weeks to one month); less frequent mowing (two-week to one-month intervals) native dry-land shrubs and trees as desired, and provides the widest range of flexibility in maintenance costs.

A wider selection of shrubs and/or trees is permitted and mowing requirements would be related to irrigation. Should the irrigation water become unavailable, the turf will not be completely lost, but will survive and respond when water becomes available again. Should over-irrigation of the primary grass turf occur more often than two-week intervals, bluegrass would be expected to invade.

- **Low-Level Maintenance**

Low-level is based on the seeding of the proper primary grass, described earlier, along with the optional use of suitable amounts and combinations of establishment water, native (dry-land) shrub, tree seed, or tree plants and mowing. Low-level with no establishment water may consider broadcast seeding or a combination of drilling and broadcast.

Summary of Relative Cost Estimates		
Beautification Level	No. Yrs. for Mtce. Costs Equal to Constr. Costs	Yearly Mtce. Costs/ \$100,000 Constr. Costs
High	6-10	\$10,000-\$17,000
Medium	10-15	\$7,000-\$10,000
Low	20-35	\$3,000-\$5,000

The District should determine the level of turf quality that is suitable and has good prospects of proper maintenance. Thorough discussions with the city, county or others who may have the maintenance responsibility are required so they will fully understand the alternatives and agree to the proposal.

More careful seedbed preparation and sowing of the seed is desirable and will greatly improve results. Fertilizer should be specified at seeding time for high medium and low (with water) levels. Low-level (without water) should be fertilized the year following establishment.

The use of establishment irrigation water wherever feasible is very desirable to obtain a thicker turf in a much shorter time. A variation that might be used on the two lower levels is installation of a partial or drip irrigation system providing water to certain selected shrubs or trees to allow a wider choice of shrubs and/or trees and yet leave the larger turf area in the lower cost level. Native shrub seed, if included (particularly on the steep slopes), may be desirable and may be followed two or three years later by planting native shrub and tree seedlings to supplement the direct seeding.

Should mowing be desired, no shrubs would be desired, or possibly mowing may be planned for a part of the area.

Three primary grasses, "Sodar" wheatgrass, "Durar" hard fescue, and "Covar" sheep fescue, when planted on the proper sites as shown in the seeding guide and irrigated, provide additional levels of turf quality. They respond to irrigation water and provide a more dense cover as the amount of desired water is increased. Care should be taken to not over-irrigate, since over-irrigation will cause bluegrass to invade the Sodar and Fescue seedings. The bulk seeding rates for primary grasses at all levels are:

- "Sodar" Wheatgrass (AGRI) 30 lbs./Ac (34 kg/ha)
- "Durar" Hard Fescue (FEOVD) 20 lbs.Ac.(22 kg/ha)
(It is desirable to include 1 lb./Ac. (1 kg/ha) of White Dutch Clover with the "Durar.")
- "Covar" Sheep Fescue (FEOVO) 20 lbs.Ac.(20kg/ha)
- Natives 3 lbs./AC (3 kg/ha)

When native shrubs and/or trees are not desired in the mix, the primary grass should be increased by 2 lb./Ac. (2 kg/ha) .

Refer to the Construction manual for further guidance on seeding techniques.

SECTION 445.00 – PREPARATION FOR FINAL DESIGN REVIEW

The Final Design Review indicates that design features have been resolved, review requirements have been completed, no further changes or major problems are anticipated, and plan preparation is in accordance with this Design manual. The plans and other documentation that will be submitted for the Final Design Review should be completed as near to a Plans, Specifications, and Estimates (PS&E) submittal as possible. The plans and documentation shall be distributed to all sections involved, including the Resident Engineer and Maintenance Engineer, for review and comments prior to the Final Design Review being held. Locally involved agencies (City, County, and Local Highway District Engineers that have been involved in the design process) shall be given an opportunity to review the Final Design project plans and attend the review.

The Final Design Review is primarily to review the following major items.

445.01 Environmental Considerations. Environmental re-evaluation is required at this stage.

- Check for compliance with permit requirements, commitments made in environmental documents (EIS, FONSI, Categorical Exclusion, etc.) and that the project design reflects the requirements of these documents.
- Check that all plans and specifications for the construction of new, or the modification/alteration of sewage systems, sewage treatment plants/systems, other waste treatment/disposal facilities, public water supply systems/public water treatment systems have been submitted to the Department of Health and Welfare for approval.

Approval must be obtained before construction may begin and all construction shall be in compliance therewith. *No deviation shall be made from the approved plans and specifications without prior approval of the Department of Health and Welfare.*

Within thirty (30) days of the completion of construction, alteration, or modification of any new sewage systems, sewage treatment plants/systems, other waste treatment/disposal facilities, public water supply

systems/public water treatment systems, complete and accurate plans and specifications depicting the actual construction, alteration, or modification performed must be submitted to the Department of Health and Welfare. If construction does not deviate from the original plans previously submitted for approval, a statement to that effect shall be filed with the department.

All plans and specifications submitted to satisfy the requirements of this section shall conform in style and quality to regularly accepted engineering standards. The Health and Welfare board may require that certain types of plans and specifications be certified by registered professional engineers. If the Department of Health and Welfare determines that any particular facility or category of facilities will produce no significant impact on the environment or on the public health, the department shall be authorized to waive the submittal or approval requirement for that facility or category of facilities.

"Public water supply" means all mains, pipes, and structures through which water is obtained and distributed to the public, including wells and well structures, intakes and cribs, pumping stations, treatment plants, reservoirs, storage tanks and appurtenances, collectively or severally, actually used or intended for use for the purpose of furnishing water for drinking or general domestic use in incorporated municipalities; or unincorporated communities where ten (10) or more separate premises or households are being served or are intended to be served; or any other supply which serves water to the public and which the Department of Health and Welfare declares to have potential health significance.

- Whenever the sale or disposal of any ITD-owned property is contemplated, the District Environmental Planner must examine the property for consideration of potential mitigation uses (see [Environmental Manual](#)).
- The mitigation summary will be forwarded to the project Designer by the District Environmental Planner. The District Environmental Planner will review the plans at final design and confirm in the final design review that the mitigation measures have been met. This confirmation will be noted in the final design review minutes. If this notation is not done, the project will not proceed to PS&E.
- Prior to Plans, Specifications and Estimates (PS&E) submittal, the District Environmental Planner verifies that any required mitigation measures are included in the construction plans and notifies the District Design Section so the verification date can be added to the Project Clearance Summary.
- Check that special provisions have covered all requirements of the various reports for archaeological, erosion and pollution control; the preservation of historical sites; and the restriction of work by the contractor in environmental areas.

445.02 Design Guidelines.

- Check previous design reports for compliance with the design features established at the time of the Preliminary Design Review.
- Note any changes in major design features (i.e., typical sections, line, and grade) previously approved in the Preliminary Design stage in the Final Design letter of transmittal.

445.03 Plans Review.

- Review the Plans and Special Provisions with special attention given to local ordinances, zoning, planning, building setback, building restrictions, fire codes, school restrictions, planned municipal or airport construction, and any other regulations that may affect the project design.
- Review the effects of relocation assistance actions. Proximity to the right-of-way line is critical for buildings or dwellings.
- Review the Bridge Summary, Layout Sheets, and the coordination of bridge rail and roadway guardrail connections.

- Review safety features such as sight distance, guardrail location and terminal types, delineation and transitions.
- Complete Project Clearance Summary Sheet and show any pending actions. Check EXPIRATION DATE column to ensure dates will cover the construction time.

Use the following table ([Figure 4-9](#)) for plan set groupings.

PLANS REVIEW

Project Plan Sheet Requirements							
The following list establishes the requirements for a near maximum number of plans sheets required for a project; some projects may have less.	Roadway/Bridge Reviews				PS&E Submission Only		
	Preliminary Design	Intermediate Design	Final Design	PS&E Transmittal	Mtce	Federal Aid Constr. By Agreement	Building & Non Rdwy Projects
ROADWAY GROUP					X	PLANS AS REQUIRED	
Title Sheet	X	X	X	X			X
Standard Drawing Index			X	X			X
Standard Drawings				X			X
Vicinity, Total Ownership, & Special Maps	X	X	X	X			X
Project Clearance Summary		X	X	X			X
Typical Sections	X	X	X	X			TO INCLUDE ANY OTHER SHEETS REQUIRED (Plan Sheet only)
Roadway Summary			X	X			
Plan and Profile Sheets	X	X	X	X			
SPECIAL DRAWING GROUP							
Minor Structure Drawings		X	X	X			
Drainage Plans		X	X	X			
Paving, Concrete Joint Approach Slab Details			X	X			
Roadside Dev & Landscaping		X	X	X			
Bike Lanes & Pedestrian Paths		X	X	X			
Source Plat-Reclamation Plan			X	X			
TRAFFIC GROUP							
Illumination	X	X	X	X			
Traffic Signals	X	X	X	X			
RR Signals & Crossing	X	X	X	X			
Pave ment Marking, Delineation Signing & Raised Channelization	X	X	X	X			
Traffic Control Plan (Const)	X	X	X	X			
*UTILITY PLANS			X	X			
*RIGHT-OF-WAY PLANS			X	X			
*MAJOR STRUCTURE GROUP	Situation & Layout	X	X	X			
*BRIDGE	Situation & Layout	X	X	X			
*STATE MTCE GROUP							
* Optional Separate Numbering							

445.04 Right-of-Way.

- Check with the District Right-of-Way Supervisor to see that complete and updated Right-of-Way Plans have been submitted.
- Review Right-of-Way Agreement and make changes, if needed, to construction plans.
- Check that an [ITD-606](#), Access Control Determination, has been submitted.

445.05 Utilities and Utility Companies.

- Check that plans are furnished to and contacts made with the utility companies involved on the project.
- Submit to the Utilities Engineer:
 - * Utility plans **in accordance with [Section 370](#)**.
 - * Project plans for railroad involvement and other data required for agreement preparation.

445.06 Port of Entry Projects.

- The Port of Entry/Special Permits Manager must be involved in the Final Design Review of all projects that affect a Port of Entry building or scale.

445.07 Materials.

- Review Materials Reports and all addenda.
- Review information on foundations.
- Check that all foundation problems are resolved.

445.08 Drainage.

- Verify that hydraulic items are identified.
- Check that special drainage problems are resolved.
- Verify that Design has reviewed the Hydraulic Study Report.

445.09 Estimate of Cost. The Preliminary Cost Estimate, or parts thereof, are not considered public information and shall not be released until after the award of the contract (see [Board Policy B-14-06](#), Approval of Plans/Specifications/Estimates and the Award of Construction Projects). The cost estimate is accessible to only those department employees whose job responsibilities require access to the project cost estimate.

- Check the average unit prices for individual bid items. The average unit prices are based on actual contractors' bid prices from past contracts, is used as a guide for cost estimating, and takes into account various factors — item quantity, project location, distance to source of material, project terrain, etc.. The prices are available on-line in a computer program or in the Average Unit Price Report. The Average Unit Price Report is printed and distributed to each District and appropriate headquarters Sections annually and is available to outside organizations at a minimal charge.

- Review the Estimate of Cost to determine if it is within the programmed amount. An [ITD-1414](#) is required to support any estimate of an increase in total project cost in excess of \$100,000 or 5% of the programmed amount.
- Review total project cost in relation to bidding competition. Increased bidding competition is encouraged by keeping most projects within a medium cost range to encourage smaller contractors to submit bids.

SECTION 450.00 – AGREEMENTS

Check the availability of the information for agreements with Local Public Agencies, utilities, railroad, and irrigation companies (see following sections for details).

After review, the information shall be transmitted to Design. If the project development procedures have been carried through properly, the Final Design Review should not result in any major changes to the plans and specifications.

450.01 Construction Agreements. Agreements covering the construction phase are required on all locally sponsored projects and those State-sponsored projects when the local agency is participating either in the costs of construction, performance of a portion of the construction, or maintenance of any portion of the project after construction. The District determines the local agency's share of labor and expenses involved in the construction and/or maintenance of the project and prior to PS&E submittal sends the information to Roadway Design. On complex projects, information should be submitted as early as it is known. The Roadway Design section prepares the construction agreement. On State-sponsored projects, the term "Cooperative Agreement" is used.

For better public relations, an agreement should be prepared on State-sponsored projects located within cities, even when the cities have no involvement requiring a construction and/or road closure and maintenance agreement. This philosophy could apply to rural areas as well.

450.02 Road Closure and Maintenance Agreements. For projects where there is a change in maintenance responsibility or there is a road closure, the District shall prepare a Road Closure and Maintenance Agreement. The Road Closure Maintenance Agreement consists of a written legal agreement with attached exhibits, project plans, etc., that show the maintenance responsibility for a state highway and the public road connections. The agreement shall identify those public road connections to be closed and the mileage of roads to be maintained by the local authorities. Parties to the agreement are the State of Idaho and the local elected authorities having jurisdiction and responsibility for the local public roads. See [Figure 4-10](#) for a sample showing legal format and information required in the agreement, exhibits and plan sheets. The agreement should **not** contain commitments to have other construction or improvement projects in conjunction with this agreement. This agreement must be executed prior to advertisement for construction.

System Actions

If a Road Closure and Maintenance Agreement involves a state highway which traverses or serves a city, the system action must include an opportunity for public hearing. The directive to hold public hearings on the state highway systems is in [Board Policy B-13-02](#), Public Involvement for Location and Design Determinations, and the procedure for initiating a system action public hearing is defined in [Administrative Policy A-13-02](#), Public Involvement for Location and Design Determinations, and [A-20-03](#), Public Hearings. The Division of Transportation Planning reviews and comments on Road Closure and Maintenance Agreements when a system action is involved. The public hearing should be held after review of the draft Agreement and before final approval.

The agreement must be executed prior to advertisement for bids for construction. (The Road Closure map, see [Figure 4-11](#), shall be part of the construction plans.) When construction is complete, the District Engineer sends a letter to the Division of Transportation Planning requesting that systems actions specified in the agreement be formalized. The Division of Transportation Planning prepares, for Board approval, documents required to complete systems action.

Following Board action, the Division of Transportation Planning notifies affected local jurisdictions of systems actions.

Road Closure and Maintenance Agreement Format

The District prepares a draft of the agreement including the exhibit and submits a copy to Roadway Design for review. The Roadway Design section circulates this review copy for comments to the Division of Transportation Planning and the Chief Legal Counsel and returns any comments to the District. The District then prepares four copies of the agreement and obtains the signature of the local entity authority. After obtaining the signatures, the District transmits the signed copies of the agreement to the Roadway Design section, who coordinates Department approval and distributes copies to Division of Transportation Planning, Central Files, and two copies back to the District. The District sends one signed agreement with original signatures to the local jurisdiction.

ROAD CLOSURE AND MAINTENANCE AGREEMENT

PARTIES

This Agreement is made and entered into this ____ day of _____, 19 ____, by and between the Idaho Transportation Department, hereafter called the “State” and _____ acting by and through its _____, hereafter called the _____ (*show Local Jurisdiction name such as city, county, highway district, and its Local Jurisdiction Authority such as Mayor and Council, Board of Commissioners, etc.*).

PURPOSE

The State has programmed the construction of a section of _____, to consist of _____, which construction will require the closing of certain roads and streets under local jurisdiction, as shown on the attached print marked “Exhibit A” and made part of this agreement.

AGREEMENT

The Parties agree as follows:

SECTION I. That the State will: (*describe actions to be taken by the department; use extra sheets if necessary*).

SECTION II. That the (Local Jurisdiction) will: (*describe action to be taken by the local jurisdiction; use extra sheets if necessary*).

SECTION III. (Optional) That this Road Closure and Maintenance Agreement upon its execution by both parties, supplements the Agreement by and between the same parties, dated _____, 19 ____, on the _____, designated as Project _____.

IN WITNESS WHEREOF

The State has caused this Agreement to be Executed by its Chief Engineer and the (Local Jurisdiction) has caused this Agreement to be executed by the (Local Jurisdiction Authority).

IDAHO TRANSPORTATION DEPARTMENT

Chief Engineer

Approved as to form:

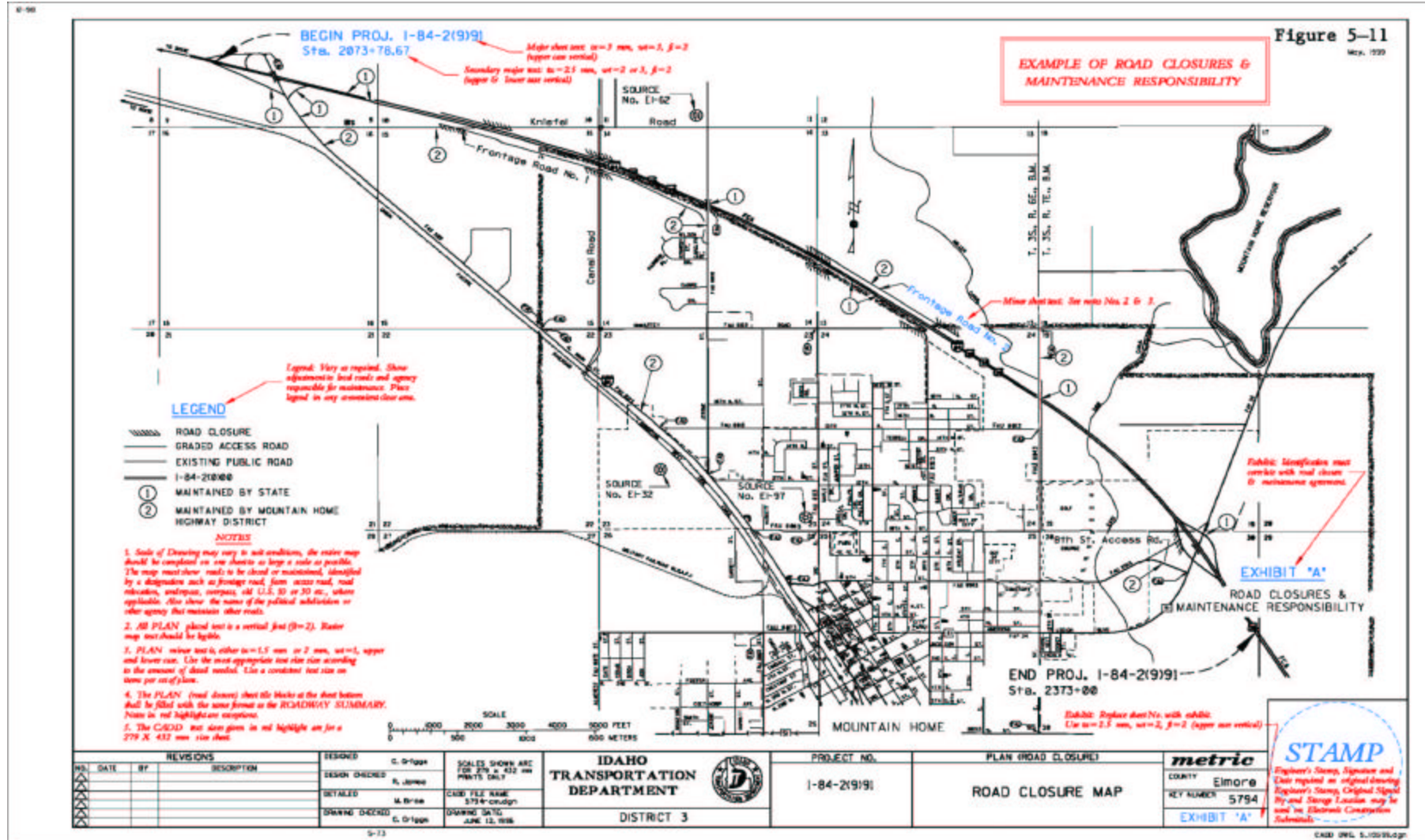
Legal Counsel

(LOCAL JURISDICTION)

(Title of Signing Authority)

Figure 4-11

ROAD CLOSURE MAP



SECTION 455.00 – SPECIAL PROVISION ITEMS – SP

Special Provisions are required for any feature of a project not covered by the Standard Specifications; where the Standard Specifications are being amended; and for deviation from the Standard Specifications.

When in doubt regarding the necessity for Special Provisions, study the Standard Specification item by item to prevent duplication. Review Sections 104 to 109 in the Standard Specifications to determine any general, overall contract requirements, which may cover the situation.

A project may require a specific material or product when there are other acceptable materials and products. When such a choice is made, it shall be approved by the FHWA Division Administrator as being in the public interest on full oversight projects and by RDE on all other projects.

- Check that Special Provision Pay Items are written fully and accurately to describe the work to be done, the method of measurement and basis of payment, and when necessary has supporting drawings. A Special Provision is not a recommendation, a suggestion, or any discretionary statements; it must be clear and a distinct direction of work. Repetition or highlighting of Standard Specifications via Special Provisions is not recommended and should be avoided.
- The Special Provision items which involve the furnishing and/or installation of electrical and/or mechanical equipment shall include the following clause:

"All manufacturer's warranties, or guarantees on electrical and mechanical equipment, materials or products purchased for use in the project which are consistent with those provided as customary trade practice must be obtained by the Contractor; and upon acceptance of the project, the Contractor shall assign such warranties or guarantees to the State."

- In addition, at the direction of the State, the following clause may be required:

"The Contractor shall warrant the satisfactory in-service operation of the electrical and mechanical equipment, materials and products for a period of time (not to exceed six months) following the project acceptance."

455.01 Special Provision Preparation. The following guidelines should be followed for preparation and submission:

- The use of Special Provisions should be held to a minimum and should be submitted only after it has been determined that construction under the Standard Specifications will not achieve the desired result or is less economical.
- Direct reference to proprietary specifications of national, regional, or local trade associations (Western Pipe Association, etc.) should not be included in the specifications. Proprietary specifications are subject to change without notice to, or acceptance by, the State or FHWA. Any references to single trade name materials in specifications and on plans will be justified in writing including a public interest finding and will be provided to RD on all projects. For Full Oversight projects, this data will be forwarded to FHWA for approval. For State Administered projects this data will be approved by the Roadway Design Engineer. Specification of proprietary items should be avoided.
- Highlighting of Standard Specifications in the contractors notes or other areas in the Contractor's Bid Proposal is discouraged.

Specifications should be formulated that will obtain the desired results and at the same time ensure full opportunity for competition among equivalent materials, equipment, and methods. In exceptional cases, where satisfactory specifications cannot be developed or obtained from organizations maintained for the specific purpose of developing specification requirements based on laboratory tests or other performance requirements; there will be no objection to the use of trade name designations, provided all or at least a reasonable number of acceptable materials or products are listed.

Special Provisions which provide for new items of work that are not covered by the Standard Specifications shall be written following the same general wording and five-part format of the Standard Specifications, in particular, the measurement and payment sections.

A heading for each respective paragraph shall include:

1. *Description of Work* — A short, condensed statement of the work to be done, together with references to Standard Specifications, other Special Provisions, or plans that further define the work. When necessary or desirable for clarity, establish the relationship of the work item to other work items or other phases of the construction.
2. *Materials* — Designate the materials to be used in the work items and establish the requirements therefore. Material specifications for the work item may be either shown in this article or grouped with those of other items in a separate heading. Complete specifications of the properties of each material and the method of test shall be detailed when applicable, and reference may be made to applicable specifications under other work items, or to AASHTO, ASTM or Federal Specifications.
3. *Construction Requirements* — Show the sequence of construction operations and the end product to be obtained. While specification requirements should be sufficiently detailed to ensure satisfactory completion of the work, specific requirements pertaining to methods and equipment should be held to a minimum to permit the use of improved equipment and encourage contractors to apply new and advanced ideas in construction methods.
4. *Method of Measurement* — Clearly denote the measurement of the item. Other items noted in the item, but measured in other items shall be clearly noted as such. Reference to Standard Specifications should be made to cover these items where they apply. Make reference that the work and material shall be in conformance with the plans and Standard Drawings covering construction details for the item.
5. *Basis of Payment* — Payment for accepted work will be made as follows.

SECTION 460.00 – ADDITIONAL CONSIDERATIONS

460.01 Project Completion Time. The number of working days or calendar days for the various construction stages and/or the entire project shall be included in the project proposal. For the contract time calculations, use the "Contract Time Determination in Project Development" Guide, prepared by the Roadway Design section dated May 1, 1992.

Contract time determination worksheets one, two, and three are required on all Federal-Aid projects and are optional on State-funded projects. Worksheet three may be computerized.

460.02 Liquidated Damages and Cost of Plans. Unless otherwise recommended by the District or management, the following Schedule of Liquidated Damages will be used for selecting the Liquidated Damages to be applied to a given contract. On projects requiring a greater number than usual of state construction personnel, the District should recommend higher liquidated damages than is indicated by the following schedule.

SCHEDULE OF LIQUIDATED DAMAGES		
Contract Estimate (Bid Amount)	Liquidated Damages (Daily Charge)	Cost of Plans
\$0 - 50,000	\$175	Plan Costs will be determined as follows: Number of printed sheets at \$0.05 + mailing fee (\$4.30) for the plans produced for the contractor use (x 27), divided by the average number of planholders (13); rounded to the next \$5.00 increment.
\$50,000 - 300,000	\$500	
\$300,000 - 500,000	\$900	
\$500,000 - 1,000,000	\$900	
\$1,000,000 - 3,000,000	\$1,500	
\$3,000,000 - 4,000,000	\$2,000	
\$4,000,000 - 5,000,000	\$3,300	
\$5,000,000 - 10,000,000	\$4,100	
\$10,000,000 or greater	\$7,700	

460.03 No-Bid Items of Work. Any work done by state or local forces on federal-aid projects must show that the work is in the public interest on an [ITD-2395](#), Request for Federal Aid on No-Bid Items of Work (Force Account). This form requires a Cost Effectiveness Analysis of the work to be performed by the state or local forces (5a) and a comparison of the cost for the same work to be performed by the contractor (5b). This same requirement is also required for projects with local public agencies. Utility work by the utility companies or their contractors do not require the completion of the [ITD-2395](#).

Force account forms for full oversight projects will be submitted to FHWA, through the Roadway Design Engineer, for approval. Force account forms for exempt projects will be submitted to the Roadway Design Engineer for approval.

Requests for no-bid items of work for striping and signal controllers and cabinets are updated by the Traffic section. Requests for no-bid items of work for seed and rest area fixtures are updated by the Maintenance section.

The department also has a blanket approval for the following items:

Pavement Marking	approved:	11/07/02
Electrical Service Pedestals, Signal Poles & Signal Control Equipment	approved:	11/07/02
Seed	approved:	05/09/01

These approvals are updated annually if the items are to be used the following year. Roadway Design submits the blanket requests FHWA for approval. Copies of the latest approvals are on file in the Roadway Design section.



460.04 Utility Coordination. A statement is received from the State, either separately or combined with the information required by [23 CFR, Section 635.309 \(c\)](#), that either all right-of-way clearance, utility, and railroad work has been completed or that all necessary arrangements have been made for these activities to be undertaken and completed as required for proper coordination with the physical construction schedules. Where it is determined that the completion of such work in advance of the highway construction is not feasible or practical due to economy or there are special operational problems, appropriate notification shall be in the bid proposals noting the right-of-way clearance, utility, and railroad work which shall be underway concurrently with the highway construction.

460.05 Construction Trainees. Each major Federal-Aid highway construction project shall consider a Contract Special Provision for construction-related trainee positions. The Roadway Design Engineer, in coordination with the District personnel and the Contract Compliance Officer, determines which construction contracts will contain a training special provision and the number of training positions that can be accomplished on each project. A bid item shall be included in the project estimate.

Before each construction season, an evaluation of potential availability of work under contracts, the duration of the work (to ensure adequate time for completion of training), and the potential long term benefits to the trainees shall be determined by the Roadway Design Engineer, in coordination with District Design personnel.

Assignment of training “slots” to specific contracts shall be based on:

- The availability of minorities, women, and disadvantaged.
- The potential for effective training.
- Duration of the contract.
- Dollar value of the contract.
- Total normal work force that the average bidder could be expected to use.
- Geographic location.
- Type of work.
- Need for additional journeymen in the area.
- Total goals established.
- Ratio of journeymen to trainees during normal operations.

If it is determined that the crafts on a project are not under-represented by minorities and/or women, then no training positions are assigned.

The provisions for Trainees shall be considered and determined during the project development phase with the project records documented on the basis for establishing, or not establishing, trainee positions and the number of positions. Based on this determination a bid item will be included in the Contractor Proposal if trainee positions are provided. The project programming, [ITD-2101](#), for construction will also indicate the number of trainee positions proposed for the project.

450.06 Disadvantaged Business Enterprise (DBE). Federal-aid projects must be reviewed for the percentage of contract work that could be accomplished by DBEs on a case by case basis. (ITD reserves the right to establish, or not establish, DBE project requirements on state-funded projects.)

Using the criterion outlined in this section, individual contract requirements are fluctuated above and below the established statewide goal in order to achieve maximum DBE participation. Items considered in establishing contract requirements will include, but are not limited to, the following:

- Location of project,
- Type of project,
- Availability of qualified DBEs,
- Estimated cost of the project or portions thereof, and
- Consideration of line items with the most DBE subcontracting, services, or supplier potential.

Prior to solicitation of bids, all proposed construction contracts will be reviewed by the Roadway Design section and the Bureau of Civil Rights to identify work which could be performed by DBEs.

460.07 Prime Contractor. Federal-Aid projects should be reviewed for the percentage of contract work that could be accomplished by the bidder (prime contractor). The Standard Specifications for Highway Construction, [Section 108.01](#) - Subletting of Contract, specifies the percentage of work that may be subcontracted. If necessary, the percentage of contract work to be accomplished by the prime contractor on federal-aid projects may be reduced to 30% of the contract amount.

The following circumstances may be reason to reduce the percentage of work by the prime contractor:

- deciding which phase of work should be primary (an example is a combination roadway and bridge project)
- rest areas or roadway projects with buildings
- when DBE requirements create a hardship for the prime contractor to perform 50% of the work

460.08 Tribal Employment Rights Ordinances (TERO) Requirements. Highway construction projects located, in whole or in part, on Indian reservation lands may be subject to tribal ordinances governing employment practices and fees. *Early* in the project development, the Designer should determine if the project will be affected by TERO requirements.

Projects that are subject to TERO requirements shall identify these requirements in the contract proposal under the heading "Tribal Special Provisions." The Special Provision requires the contractor to contact the TERO office on the reservation to administer employment of tribal personnel on the project, and/or provide trainee positions.

Before commencing work on a project covered by Tribal Employment Rights Ordinances, the Resident/Regional Engineer must have received a facsimile copy of the agreement between the Contractor and the Tribal Representative establishing preferential employment rights for Indians and the amount of the TERO fee, if applicable. The District Engineer, or a designated representative, shall periodically (at least monthly) contact the appropriate TERO Representative for assurance that the agreement is being honored. A memo concerning the periodic contact shall be sent to the Contract Compliance Officer, in Civil Rights, with a copy sent to the Construction Engineer.

The Indian reservation boundaries in Idaho are displayed in the following [Figures 4-12](#) through [4-15](#).

Figure 4-12

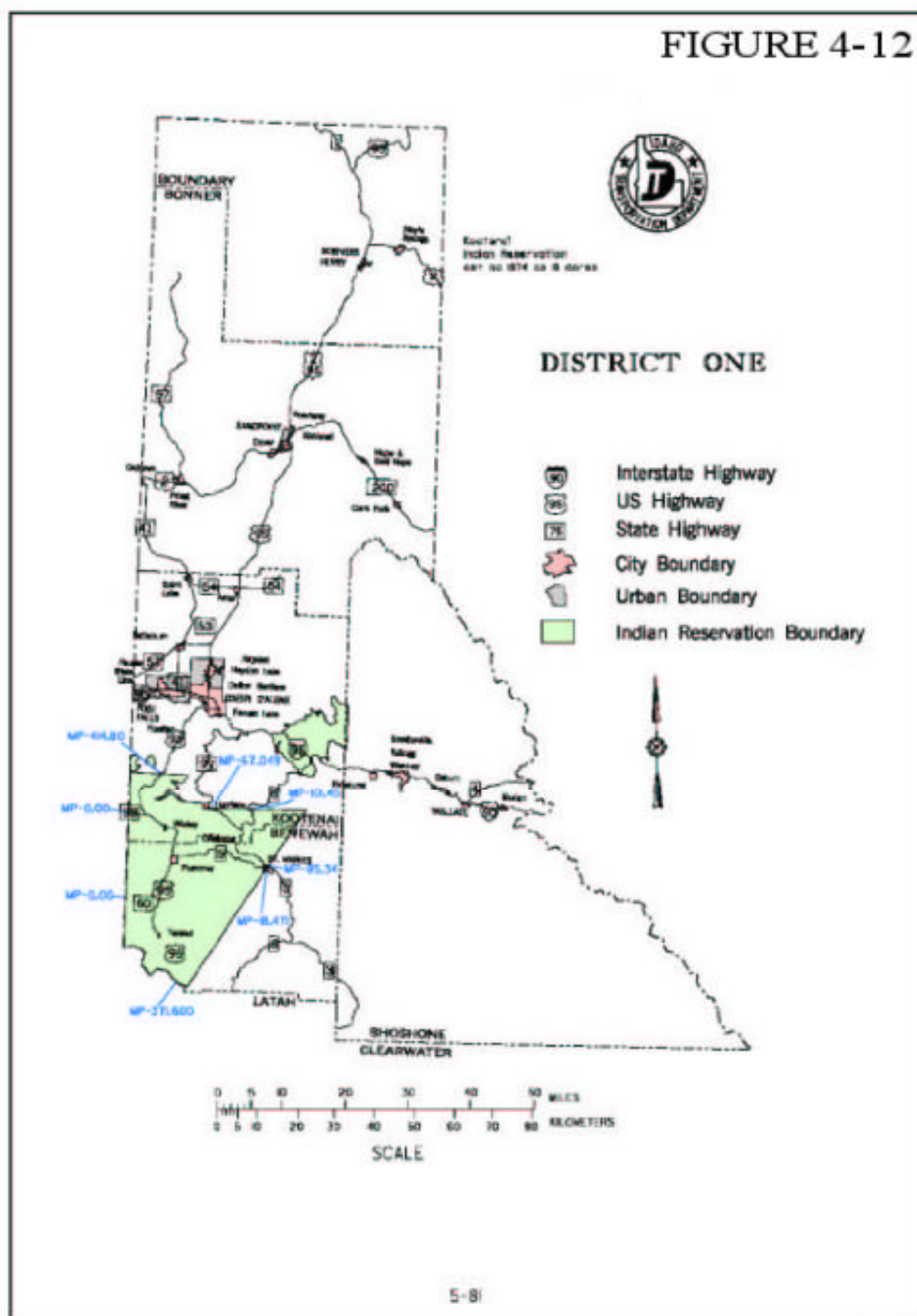


Figure 4-13

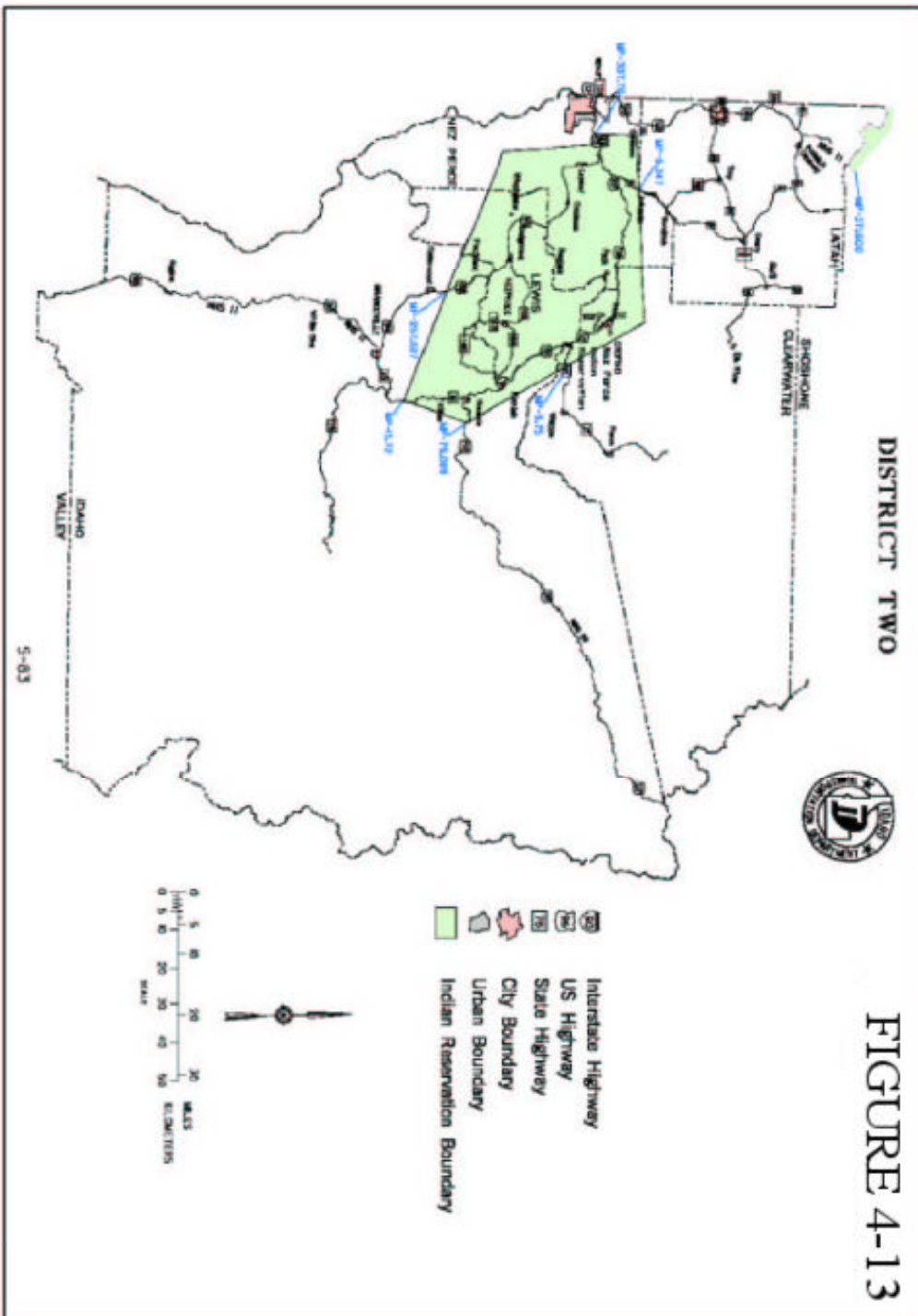
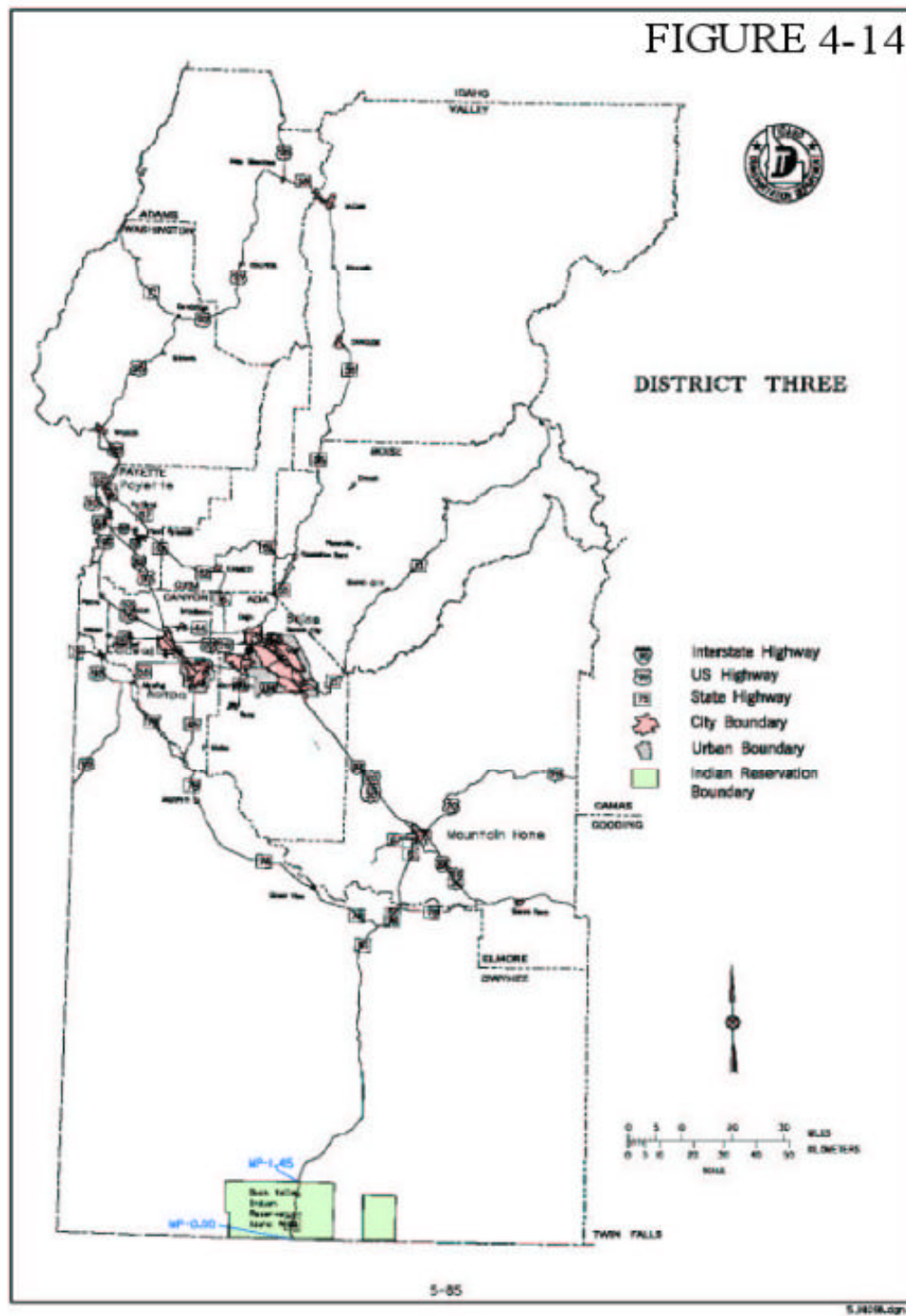


Figure 4-14



5_151098.cqn



SECTION 465.00 – PROPOSAL DOCUMENTS

Proposal documents are the plans, specifications, etc., that are assembled to define advertised projects. The contract proposals are to be written following the specification format. The proposal inserts are available from Roadway Design. The inserts are available on diskette in MS WORD format or are in a department's server—Design on HQISSV23/Standards/Bid Inserts99.

465.01 Proposal Document Preparation. Special provision documentation (proposal document preparation) is to be typed on a word processing program and transmitted to Roadway Design's library. Number the sheets from cover to back to ensure all sheets have been received.

The following steps should be worked through in order to complete each proposal.

- Complete the PS&E Information sheet ([Figure 4-17](#)) or provide required information to the RD Associate.
- Review latest edition of Roadway Design inserts. Complete I-1 by filling in the project number, project name, and county. Fill in the latest edition of the supplemental specification. Follow the instruction sheet to get the correct Supplemental Specifications and PS&E Standard Specifications and Inserts.
- Add source and cost of materials from the Joint Phase III Materials Report.
- Insert liquidated damages and working days.
- Insert contractor's notes from Joint Phase V Materials Report, and notes concerning items not tied to specific pay items, concerning utility adjustment, etc.
- Insert applicable current proposal inserts (CN-1 , CN-21, etc.) (***CHECK THE DATE TO BE SURE THAT THE INSERT IS THE MOST CURRENT***)
- Insert any revision to Standard Specifications from the Joint Phase V Materials Report, Bridge, or revisions that you have determined necessary.
- Insert special provisions from the Joint Phase V Materials Report, Bridge, or nonstandard items that you have added as special provisions.

465.02 Plan Quantity. Only those items that will not change prior to construction can be designated as a plan quantity item. When an item other than those currently covered in the Standard Specifications are selected for designation of *plan quantity*, the Standard Specifications Method of Measurement or Basis of Payment will need to be modified to required Plan Quantities in accordance with the Standard Specifications for Highway Construction, [Section 109.01](#).

465.03 Modification of Standard Specifications. When standard specifications are to be modified for a project, the sequence of modification shall follow the order of items, page by page, in the Standard Specifications book. In making modifications to the existing specifications, it is desirable, to delete entire paragraphs and substitute one or more new paragraphs that are written to cover the deleted or additional specifications.

465.04 Contingency Items. The use of items as contingencies should be clearly addressed at the Final Design Review.

The definition in the spec book (pg 4) defines Contingency Item (Amount) as an item with a pre-entered price. Keep in mind that adding the words “Contingency Item” to the supplemental description line in your estimate does not do anything.

When you have an item that

- you are not sure you will need
- you cannot estimate the quantity

consider the following options:

Use a normal Bid Item

Use a normal Bid Item and include a contractors note

Use a Pre-entered Unit Price (Contingency Item) - The regional engineer will need to approve this method.

The way to accomplish this in your Transport estimate is to toggle the “Pre-Established Price” entry in under your pay item to say yes (this is the 3rd fm the bottom entry)

Use a Contingency Amount (Force Account) – this will result in a total \$ amount being pre-entered on the bid schedule. The quantity will be 1 and the unit will be CA (Contingency Amount). If the work is needed, it is paid by force account.

The way to accomplish this in your Transport estimate is to use the unit SPCA . Toggle the “Pre-Established Price” entry in under your pay item to say yes (this is the 3rd fm the bottom entry)

If you need to make modifications to the method of measurement and the basis of payment in your proposal, it should be done by writing a Special Provision.

SECTION 470.00 – SPECIFICATIONS

Specifications detail project requirements, modifications, and other restrictions and must follow a specific format (see [Figure 4-16](#), [4-17](#), and [4-18](#)).

ITD SPECIFICATION FORMAT 9/00

Font: Times New Roman (11pt) (Format Document's Style for this Font in all Sections)

Margins: Top 0.75"
 Bottom 0.75"
 Left 1"
 Right 1"
 Header 0.5"
 Footer 0.4"

Use tabs to set "Pay Item" and "Pay Unit" at 0.5" and 4.5".

The tab and indent standard is at 5 space increments. Do not substitute spaces for tabs or tabs for indent commands.

The footer will be formatted as follows:

PROJECT NO. ABC-1234(567)890; KEY 9876

[Flush Right]SHEET X OF Y

Use the Widow/Orphan function for documents more than one page in length.

Do not use a hard page, page break or section break except to keep a graph or table on a single page.

Center only the following headings within the text:

SOURCE AND COST OF MATERIALS

COMPLETION TIME AND LIQUIDATED DAMAGES

CONTRACTORS NOTES

Use the following format for other headings:

Description. (Bold the heading)

Basis of Payment. Payment for accepted work will be made as follows:

Pay Item

Pay Unit

Submit Special Provisions to Roadway Design Area Engineers in Word format as attachments to Microsoft Exchange. Name the document as follows:

####PSE.DOC

(Where #### = Key Number)

FOR INSERTS & SP's:

A version date is used in the heading to identify the insert's most recent version, and are stored in Design/hqissv21 drive under \Standards\bid inserts. When modifying an insert in a special provision, the heading must have (modified) added.

Version dating is normally not used for SP's. If dated versions do exist, modifications shall be treated the same as inserts.

X:\STANDARDS\BID INSERTS\PSEFORMAT.DOC

PS&E INFORMATION

PROJECT NO(S): _____

KEY NO(S): _____ HIGHWAY(S): _____

LOCATION: _____

PROJECT DESCRIPTION:

RESIDENT ENGINEER: _____ PHONE NO.: _____

DISTRICT: _____ COUNTY(IES): _____

PLAN CHARGE: _____ ENGINEER'S ESTIMATE: _____

COMPLETION TIME: _____

FHWA OVERSIGHT: _____

THIS IS A DIRECT FEDERAL PROJECT: _____

EXAMPLE OF 1/97 SPECIAL PROVISIONS

SPECIAL PROVISIONS

IDAHO FEDERAL-AID PROJECT NO. NH-STP-IR-5110(100)

AND IDAHO PROJECT NO. STKP-1566

Rock Creek, Boundary County; Bonners Ferry

Boundary County

The following Special Provisions and all addenda issued, supplement or modify the 1995 State Standard Specifications, the October, 1998, Supplemental Specifications, SSP-307 Open Graded Rock Base (Rock Cap), SSP-640 Construction Geotextiles, SSP-718 Geotextiles, FHWA-1273 Federal Aid Contract Provisions, Civil Rights Special Provisions, and General Wage Decision ID980001.

SOURCE AND COST OF MATERIALS

Material may be obtained from the following source(s): By-72s.

AGGREGATE FOR PLANT MIX, COVER COAT MATERIAL, ROADMIX, ANTI-SKID MATERIAL, ANTI-SKID MATERIAL (SALT TREATED), CHOKER, BLOTTER, PIPE BEDDING, GABION FILL MATERIAL AND BOULDERS FOR DROP STRUCTURES, AND CHANNEL LINING

Source By-72s is located approximately 0.8 meters left of M.P. 69.87, US-2. Material is available to the Contractor at a cost of \$0.09/____ or \$0.20/____ payable to the Idaho Transportation Department.

See the source plat for operational requirement in the source.

Only item #2 of the reclamation plan shall apply to this contract.

TOPSOIL

Material acceptable as topsoil may be salvaged from roadway excavation.

RIPRAP

It shall be the Contractor's responsibility to obtain an approved source of riprap.

TARGET BLEND FOR PLANT MIX

The target blend aggregate proportioning for Source By-72s is as follows:

Plant Mix Pavement Class I

<u>Stockpiles</u>	<u>Percent</u>
Stockpile A	15
Stockpile B	25
Stockpile C	60

COMPLETION TIME AND LIQUIDATED DAMAGES

NH-STP-IR-5110(100)

All work on this project shall be completed in 200 working days.

Liquidated damages for failure to complete the work on time on this project will be \$1,500.00 per day.

STKP-1566

All work on this project shall be completed in 30 working days.

The amount of Liquidated Damages for failure to complete the work on time on this project will be \$700.00 per day.

In no case will the amount of Liquidated Damages for the contract exceed \$1,500.00 per day.

CONTRACTOR'S NOTES

STOCKPILE SITE - BONNERS FERRY MAINTENANCE YARD

Four thousand tons (4,000 t) of 125 mm aggregate for roadmix pavement, 9,072 metric tons anti-skid material, _____ metric tons anti-skid material (salt treated) and 5,000 tons of cover coat material Class 4 shall be stockpiled as directed in the Bonners Ferry Maintenance Yard located right of M.P. 505.0, US-95.

STATE CONSTRUCTION

State construction will be required on this project. No separate payment will be made for phase construction, the work hereof being considered incidental to excavation.

STAGE I CONSTRUCTION

Traffic is maintained on US-95 while constructing and armoring the fill from Station 547+50 to 559+00 outside of existing US-95. This work shall be completed in 1993 and no other stages started until the following year. See plan sheets 22, 23, and 24.

STAGE II AND STAGE III CONSTRUCTION

The remaining earthwork and armoring, aggregate, paving, and seal coat shall be completed in 1994 as shown on plan sheets 22, 23, and 24.

NOTE: Stages II and III may be allowed to proceed in 1993 if the Contractor can demonstrate that all work can be successfully completed prior to November 1, 1998.

BUY AMERICA PROVISION

DATE

All steel or iron materials permanently incorporated into the work shall have been produced in the United States. All manufacturing processes for these materials including the application of coatings for such materials must occur in the United States.

Certifications which document that steel and iron have been manufactured and that coatings for iron or steel have been applied in the United States shall be provided to the Contractor by the manufacturer. The Contractor shall provide the required certifications to the Engineer prior to incorporating these materials into the work. Certification shall extend to materials utilized in manufactured and fabricated products purchased by the Contractor.

Certifications shall conform to the requirements of Subsection 106.04.

Should foreign steel, iron, or applied coatings for iron or steel in excess of the quantities allowed herein become incorporated into the work, the Contractor shall remove such materials in excess of the allowable maximum and replace them with materials complying with these specifications at no increased cost to the State.

CIVIL RIGHTS SPECIAL PROVISIONS

DATE

Attention of prospective bidders is directed to "Part III, DBE Requirements" of Civil Rights Special Provisions. The successful bidder will be required to meet the specified goals or provide well documented information to assure that good faith efforts have been pursued before award of contract is made.

On this contract the goal for DBE participation is ____%.

EMPLOYMENT AGENCY

Date

The designated employment agency is the Idaho Department of Labor, 1501 S. Main St., Bonners Ferry, ID 83505-1136.

USE TAX

Date

The exercise of control over State-owned material by a Contractor who is improving real property (roadways, etc.) will incur the imposition of a use tax.

Bidders are advised to consult [Section 63-3609](#), Idaho Code, and Regulation #09-3 of the Idaho Department of Revenue and Taxation, or contact the Idaho Department of Revenue and Taxation for guidance. Telephone calls to the Department of Revenue and Taxation may be directed to July Fenn, telephone number (208) 334-7691.

In the case of aggregates the amount of this tax will differ depending on whether the material is obtained from a State-owned material source or whether it is obtained from a State-owned stockpile. The tax will also differ depending on whether a Contractor both crushed the material and placed it on the roadway, or whether the Contractor performs only one of these operations and hires a subcontractor to perform the other. The estimated cost of State supplied materials is: \$256,900.00.

ON PAGE 112, SUBSECTION 210.05 - BASIS OF PAYMENT

Add the following to the fourth paragraph:

Structure Excavation and Compacting Backfill related to pipes and aprons shall be considered subsidiary work and costs shall be included in the unit prices for Pipe and Aprons.

ON SHEET 1 OF 1 OF SSP-307 OPEN GRADED ROCK BASE (ROCK CAP), SUBSECTION 307.01-DESCRIPTION

Delete the text and substitute the following:

This work shall consist of loading, hauling, placing, and compacting open-graded rock (rock cap) as shown in the typical sections or as directed.

SP-1 BACKFILL FOR PIPE CULVERTS

Description. This item shall consist of furnishing and placing backfill materials consisting of approved sand or gravel, or a mixture of approved sand or stone screening with crushed rock, provided there is a substantial excess of sand or stone screening in the mixture.

Materials. All materials shall pass a 75 mm² opening. Acceptance shall be by visual inspection.

Construction Requirements. Backfill shall be placed as shown in the plans. Care shall be exercised to protect the culvert.

Method of Measurement. The method of measurement will be per cubic meter (cubic yard), in accordance with Subsection 210.04 - Method of Measurement for Compacting Backfill.

Basis of Payment. Payment for accepted work will be made as follows.

Pay Item	Pay Unit
Backfill for Pipe Culverts	m ³

SP-2 ANTI-SKID MATERIAL IN STOCKPILE (SALT TREATED)

Description. This work shall consist of crushing, providing and adding salt, loading, hauling, and stockpiling anti-skid material as directed.

Materials and Construction Requirements: Anti-skid material (salt treated) shall meet the requirement of Section 635, Ty2.

Salt shall be added by calibrated feed to the final belt at the average rate of 45 kg/t of aggregate. The Engineer may require the Contractor to vary the average rate to allow for leaching. Salt shall be furnished by the Contractor as specified in ASTM-D632-72, Type I, Grade 2.

Method of Measurement. Anti-skid material in stockpile (salt treated) will be measured by the ton, including salt.

Basis of Payment. Payment for accepted work will be made as follows.

Pay Item	Pay Unit
Anti-skid Material in Stockpile (Salt Treated)	t
No separate payment will be made for salt	

SPB-2 METAL ROOFING – PEDESTRIAN OVERPASS

Description. This item consists of furnishing, erecting, and painting metal roofing in close conformity with the lines and grades shown on the plans or established by the engineer.

Materials. The steel deck and all flashings shall be formed from steel sheets conforming to ASTM A45-64 and ASTM A447-65T. The steel shall have received, before being formed, a metal protective coating of zinc conforming to ASTM A525-65T wiped coating and the Federal Specifications 00-S775c Type 1, Class E.

Construction Requirements. The latest American Iron and Steel Institute specifications for the design of light gauge steel structural members shall govern the design of all deck units. Roof deck units shall be in lengths to span over the three or more supports wherever possible. Roof deck sheets shall be fastened to the supporting structural tube truss with an approved method. Drain gutters and down spouts will be provided to adequately remove surface moisture.

Method of Measurement. Metal roofing will be measured by the square meter of roof complete in place.

Basis of Payment. Payment for accepted work will be made as follows.

Pay Item	Pay Unit
* Metal Roofing Pedestrian Overpass	m ²

When multiple items are used within an SP, show the SP number prior to the pay item name in the basis of payment, i.e., SP-1a name.

Drain gutters and down spouts will not be measured separately. Cost of these items shall be included in the cost of metal roofing.

SECTION 475.00 - FINAL DESIGN/PS&E DOCUMENT PACKAGE – PARTS I AND II

The following data is required to support project design and development.

Part I - Original Plans

- Plans Required: One set of 11 inches x 17 inches (279 mm x 432 mm) white prints.
- Minor Structure Group: Plans for all structures other than Bridge.
- Major Structure Group: Roadway Design will obtain white prints from the Bridge section. Sheets required are:
 - 1) Layout sheets for each structure, and
 - 2) Drawings for guardrail connection, Roadway to Bridge.

Part II - The Design Contract Envelope

- The same requirements for Final Design Review submission are required for PS&E submission but in draft form.
- All material for the Contractor's Bid Proposal shall be 8 ½ x 11 inches (216 mm x 279 mm) (letter-sized) material.

475.01 Plans and Data Required for Final Design Review. The Final Design Review may occur before acquisition of right-of-way or during right-of-way acquisition and without final bridge design approval. The Final Design Checklist (see [Figure 4-19](#)) should be completed to ensure that all details are completed before submittal. The District shall request a Final Design Review by submitting a letter (see [Figure 4-20](#)) to Roadway Design that specifies the time and date for the review, and includes all documents to support the design criteria. A copy of the letter should be included with the roll plans to enable prompt action to be taken upon receipt of the plans.

475.02 Plan-in-Hand Review. Either before or during the Final Design Review, a plan-in-hand field review to check constructability and maintainability is required for all projects **except**:

- Projects that are under heavy snow cover at the Final Design Review time may be impractical.
- Seal-coat projects, simple overlays, and well-drilling projects.

The plan-in-hand field review will be attended by the Project Development Engineer and/or Designer, Resident Engineer and/or Project Engineer Chief, and others including the Federal Highway Administration (FHWA) Area Engineer as invited.

475.03 Final Design Review Report. A letter summarizing the decisions in regard to the comments and suggestions presented at the final design review shall be prepared by the District. Copies of this letter shall be furnished to all concerned.



Figure 4-19

FINAL DESIGN CHECK LIST			
Project No.		Reviewed by	
Key No.		Date	
Project Name			
District No.			
District Projected Bid Opening Date			
Program Amount			
	Check Project Tracking		
	Update 1414?		
	Check that all Transmittals are included.		
	Review Files, Materials Reports, and Plans.		
	DESIGN: Distribute Letter and/or Plans and Proposal to: <input type="checkbox"/> Bridge <input type="checkbox"/> Materials <input type="checkbox"/> FHWA <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Utilities		
PROPOSAL			
	Check for proper format: Project number and location against Project Tracking.		
	PS&E Information completed?		
	Are all applicable supplemental special provisions and applicable Federal and State requirements called out?		
	Does it include the source and cost of materials?		
	Are the liquidated damages correct?		
	Are all notes to the contractor applicable and not duplication of spec book?		
	Tribal regulation included, if appropriate?		
	Partnering insert included, if needed.		
	Can prime contractor do 50% of contract on federal-aid project (20% for State project)?		
	Are there building projects (federal-aid) warranties up to 6 months for electrical and mechanical?		
	Check working days or completion date against Contract Time Determination.		
	Is utility coordination Contractor Note included?		
	Review specification modifications for intent.		
	Are Materials Special Provisions supported by the Materials Report?		
	Has estimated cost been shown for furnished material? (Use Tax)		

Figure 4-19

FINAL DESIGN CHECK LIST		
PROPOSAL (continued)		
	Does propriety items have “or equals” statement? If category II research items are used — highlight and do	
	Describe areas requiring RR insurance (each separate project on multi-project contracts).	
	Compare SP’s name and number to plan summary and cost estimate.	
	Erosion control statement or plan included?	
	“Target Blend” is required for non-commercial Class 1 and 2 Plantmix.	
	Ensure contractors protect bridge joints during seal coat operations. Resident & Regional Engineers need to protect all items near bridges and roadways (i.e., ice detectors, etc.).	
ESTIMATE		
	Are proper signatures on Final Estimate?	
	Check if contingency items are tied down and are not open ended.	
	Are all programmed items included on the engineers estimate?	
	Are there estimates separated for roadway, structures, etc.?	
	Review prices.	
	Are there any items that have salvage value?	
	Are furnished items listed?	
	Should the project include trainees? How many?	
	Railroad Flagging?	
	Is there any work to be done by others? (State, County, Utilities, Etc.)	
	Is this work justified by an ITD-2395 ?	
	Compare costs to program amount (all programmed items); if necessary update ITD-1414 .	
	Are trainees included, if appropriate?	
PLANS		
GENERAL		
	Are plan sheets legible?	
	Do they show the work to be done?	
	Check for appropriate scale for reduction (buildings, etc.).	
	Has recommended changes on previous review been made?	
	Review EIS for any special environmental conditions specified.	
	Right-of-Way agreement changes made?	
TITLE SHEET		
	Is the project title correct?	
	Are applicable standard drawing, structural drawings, traffic control, bridge drawings listed?	

Figure 4-19

FINAL DESIGN CHECK LIST			
PLANS (continued)			
	Are the sources shown?		
TYPICAL SECTION			
	Are station limits shown?		
	Is the estimating data complete?		
CLEARANCE SUMMARY			
	Is the estimating data complete and agreeable with Materials Reports?		
	Check all clearances. (Are there any needing renewed?)		
	Has Mitigation Plan been approved?		
ROADWAY AND BRIDGE SUMMARIES			
	Check items number and nomenclature.		
	Check bridge items against situation layout summary for each structure.		
	Check all summary items against engineer's cost estimate items.		
	Check that there are separate summaries for Roadway and Bridge.		
PIPE SUMMARY SHEETS			
	Check for completeness and if acceptable alternates are shown.		
SOURCE PLATS			
	Is the area to be worked clearly shown?		
	Does the log hole data show sufficient data to draw a reasonable conclusion?		
	Does it have archeological clearance?		
	Is it cleared by right-of-way?		
	Is the Reclamation Plan approved?		
MILEPOST CHANGES			
	Proposed milepost changes. (ITD-2184)		
	Milepost log work sheet. (ITD-2185)		
	Are plan sheets indicating milepost equations attached to ITD-2184 ?		
	Are mileposts indicated at beginning, end, and one mile increments on projects?		
COMMENTS:			

ITD-500 3-98

**Idaho Transportation Department
Department Memorandum**

DATE: _____**Project No.(s):** _____ (____)**TO:** ROADWAY DESIGN ENGINEER**Key No.(s):** _____**FROM:** PROJECT DEVELOPMENT ENGINEER**Project Identification, County, Etc.:**

DISTRICT # PROJECT NAME (as it appears in the
6-Year Program), _____ COUNTY,
WA # _____

RE: Final Design Submittal

A Final Design Review is requested for this project on (date, time, and location). Included for review are:

- Plans
- Proposal
- Final Design Envelope (*see Final Design Submittal requirements*)
- Contract bid proposal
- Preliminary cost estimate
- Request for federal-aid on No-Bid Items of Work (*Force Account forms to be included*)
- Calculations for Contract Time
- Permits and Application
- Mitigation Summary

Additional information that may be included are:

- Comments on any unusual aspect of the project (*use of other than approved standards requires approval from the Roadway Design Engineer*)
- Waiver of scheduled reviews or when held.

(Note any changes made to a Consultant project that have been discussed with the consultant.)

Attachment

cc:

SECTION 480.00 – SPECIAL ROADWAY PLANS

480.01 Abbreviated Project Plans. Abbreviated project plans may be used provided there is sufficient information to properly complete the project, particularly for special type projects such as Projects by Agreements, Emergency Relief (ER), and Safety Projects. Abbreviated project plans are also adaptable to special projects for Resurfacing, Restoration, Rehabilitation, and Reconstruction.

480.02 Projects by Agreement. Projects by agreement are generally constructed by Local Public Agencies (City, County, etc.), Utility, and Railroad companies with their forces after an agreement is made between the department and the entity. The Contract Proposal and contents are not required since the construction requirements as written in the agreement are shown on the plans.

480.03 Emergency Relief (ER) Projects. Emergency Relief projects are funded with emergency funds authorized for the repair or reconstruction of highways and bridges which have suffered serious damage as the result of acts of nature.

480.04 Safety Projects. Safety projects are funded with federal and state funds that are authorized for expenditures to update and repair features effecting safety on the roadway, such as minor signing, delineation, pavement marking, guardrail, and railroad crossings. Safety projects are to have a Final Design Review and comply with the applicable parts of the review.

480.05 Additional Data Requirements for Special Projects. Additional data that is required for the above mentioned Special Projects are:

- Agreements, exhibits and/or appendices, records, and other data to support the cost expenditures for use of men and equipment.
- Right-of-Way Data showing all features of existing and any new acquisitions of right-of-way including easements.
- Copies of the Right-of-Way Certificate or data previously submitted to the headquarters Right-of-Way section.

SECTION 485.00 – BRIDGE DATA REVIEW

(SEE SECTION 1000 – STRUCTURES)

